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ESTABLISHED 1881.

Illustrated Price List.

1895.

1896.

WAITE & BARTLETT M'FG CO.

Dr. HENRY E. WAITE, Pres. and Gen. M'g'r.

Exporters, Dealers and Manufacturers



of

**ELECTRO-MEDICAL AND ELECTRO-SURGICAL
INSTRUMENTS**

FOR

PHYSICIANS AND SURGEONS.

OFFICE:

**147 EAST 23d STREET,
NEW YORK.**

C. H. GOLDTHWAITE & CO.
SURGICAL INSTRUMENTS,
186 WASHINGTON ST., BOSTON, MASS.

*To the Medical Profession,
Gentlemen:*

We respectfully call your attention to our Illustrated Catalogue and Price List for 1895, in which you will find a detailed description (of not only our new and improved Static Machines, Faradic and Galvanic Batteries) but also of our Perfected Electro-Medical and Surgical instruments and accessories which we have been furnishing to your profession for the past fifteen years.

Notwithstanding the general depression of the times, our business has increased, and our export sales to England, France, Germany, South America, Australia, Japan and China are greatly in excess to those of 1894.

We note the above fact with considerable pride as showing the high consideration in which our instruments are held all over the world.

Constructed under our personal supervision, using the best materials, employing only skilled and experienced workmen, with a large factory fully equipped with every known facility, and having availed ourselves of the suggestions and practical experience of the Leading Workers of Electro-Therapeutic requirements, we claim to produce instruments which for precision, utility, durability, style and convenience are not equalled by any other manufacturers.

In proof of the above claim, please notice the testimonials received from so many of the leading members of your profession as well as the names of those who are using our instruments both at home and abroad.

We also take pleasure in calling to your attention that from the World's Columbian Exposition we received the only Medal given for Static and Faradic Machines, also special mention on the Engleman Faradic Apparatus.

We take this opportunity to thank those members of the profession who have devoted their time with us in experiment, and also those who have given us many valuable suggestions that have greatly aided us in bringing our instruments to their present state of perfection.

Yours truly,

WAITE & BARTLETT MFG CO.

SIXTEENTH ANNUAL EDITION OF

WAITE & BARTLETT MANUFACTURING CO.'S Illustrated Catalogue & Price List.

1895 & 1896.

DR. HENRY E. WAITE, PRES. & GEN. M'GR.

THE WORLD'S COLUMBIAN EXPOSITION

Accredited to us, over All Competitors, Home and Foreign,

THE ONLY AWARD

FOR

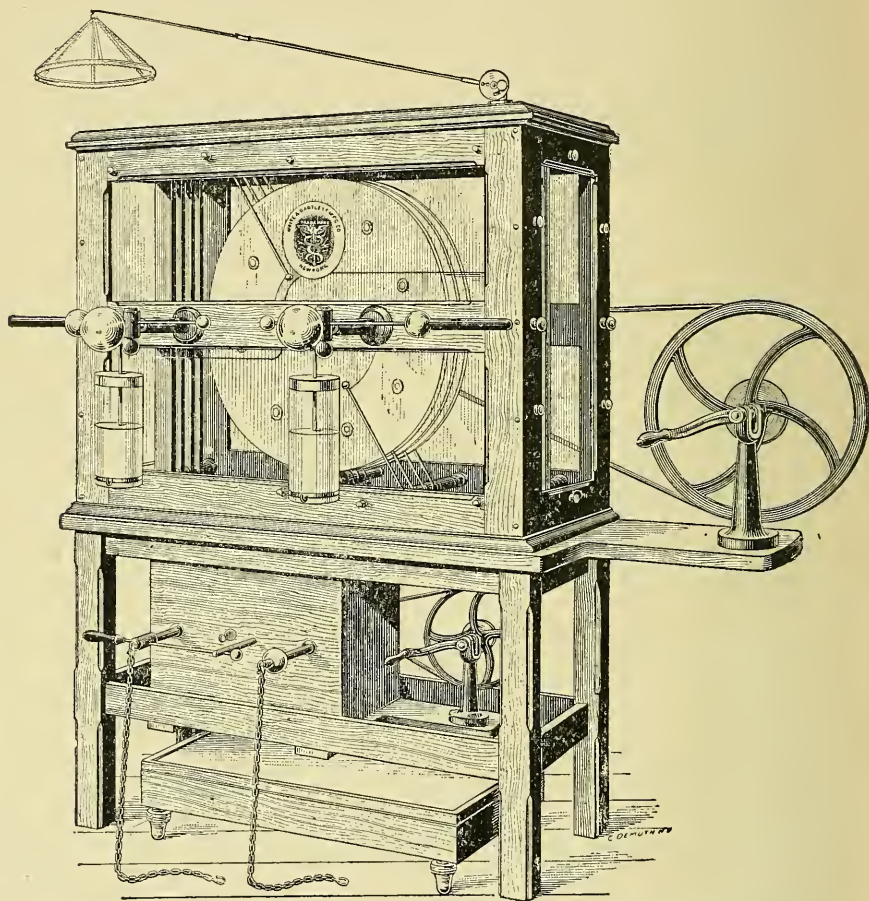
STATIC MACHINES AND SPECIAL INDUCTION COILS.

There are many Electro-Medical instruments in the market whose merit or demerit cannot be determined except by trial. How, then, can the physician purchase successfully? Very simply: buy a manufacturer's who has proved that he values his reputation. If the business of a certain manufacturer has grown with enormous rapidity it is a pretty safe argument in behalf of his production. You can rest assured that such a house is not going to throw away, for the sake of a few dollars made by cheapening its goods, a reputation earned by years of hard work. The best success is to succeed. The best Electro-Medical instruments are those that have proved successful.

Since we began business in 1881 it has been our aim to make instruments that would meet the requirements of the Medical Profession better than those of any manufacturer either in this country or in Europe. We leave it to you to say whether we have succeeded.

THE RANNEY STATIC MACHINE FOR 1895.

No. 1.



Height, 63 inches : width from back to pole pieces, 36 inches ; total length, 72 inches.

PRICE, COMPLETE, including Charger, Insulated Platform, set of Leyden Jars, and all the Electrodes as shown on page 4, - \$400.

FURNISHED IN HANDSOME ANTIQUE OAK OR MAHOGANY CASES.

Price of Machine, complete with Electro Motor for using the Edison Current.....\$440

These Machines are shipped in crates, entire, and do not have to be put together by the purchaser.

In presenting to you our static machine for 1895 we wish to call your attention to a number of very important improvements that have been made. This machine is constructed of the very best materials obtainable ; it is made on scientific principles and is the most perfect machine of its kind in the world to-day. In our standard machines are six

revolving plates 26 inches in diameter, and six stationary plates which are held in position by grooved rods at each end; these are adjustable so that they can be moved to the right or left to keep them from coming in contact with the revolving plates. The case is made of oak, well finished, the joints are all packed with rubber, rendering it as air tight as possible. Under the table is supported a small Wimshurst machine for charging, thus rendering it unnecessary to open the case for this purpose. The method of charging and connecting this machine is explained with the directions given with each machine. The essential improvements of our static machine are covered by letters patent No. 497,226, dated May 9th, 1893, and No. 405,334, June 18th, 1889, and all persons are warned against making, using, buying or selling infringements upon it. It is well known to scientists (ever since the invention of the Holts machine in 1856) that it was a powerful machine and gave the best results of any machine that has ever been constructed. The faults have been the effects of the moist atmosphere upon it, which rendered it practically useless, till we placed it in an air tight case and made the improvements which have rendered it not only the most perfect but the most powerful machine up to date.

A number of them are in operation in New Orleans, and are not affected by the climate, but are in use every day in the year. We guarantee these machines to be exactly as represented in every respect, and call your attention to testimonials from eminent physicians who are using them.

1. The case is so constructed that all its joints are packed with soft rubber before its screws are tightened.

2. The doors of the case are so arranged as to be drawn tightly in contact with a frame covered with soft rubber by means of milled screws.

3. The poles of the machine perforate the wooden portion of the case, instead of the glass windows. They are insulated with hard rubber, and the apertures are protected with soft rubber packing placed between hard rubber washers and the wood. Thus the danger of breakage of the case glass by accident is overcome without impairing its impermeability of dampness or allowing of leakage of the electricity generated when the machine is in use, while the strength of the case is materially increased by this modification.

4. The steel axle is so built as to reduce the friction to a minimum and to allow of its being oiled without opening the case.

5. The driving wheel is very large, and rests upon a cast iron support. This insures both ease of motion and durability.

6. The glass plates of the machine are 12 in number. Six of these revolve, and six are stationary. The stationary plates are of peculiar shape. The revolving wheels are made of carefully selected glass, so as to be as true as possible.

7. The electrodes are made with handles composed of hard rubber instead of glass; they are therefore less liable to be broken, and are as perfectly insulated.

8. Each machine is provided with three pairs of Leyden jars of different sizes, and a set of electrodes. A 1-12 horse power electric motor furnishes sufficient power to run the machine to its full capacity.

No. 2.



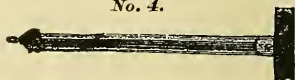
CARBON ELECTRODE.....\$2 00

No. 3.



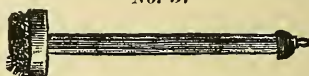
1 1-4 in. Brass Ball.....\$3 00

No. 4.



RUBIFACIENT.....\$3 00

No. 5.



BRASS BRUSH.....\$3 00

No. 6.



WOOD BALL.....\$2 00

No. 7.



WOOD POINT.....\$1 75

No. 8.



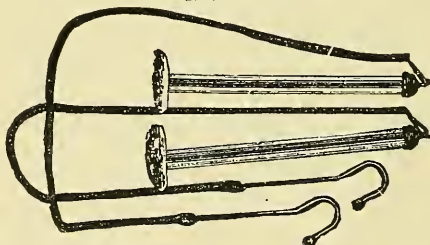
2 1-4 in. BRASS BALL.....\$4 00

No. 9.



SPINAL ROLLER for Massage.....\$5 50

No. 10.



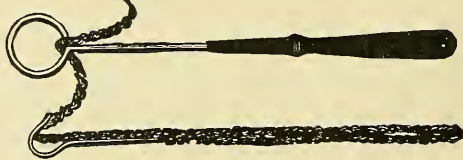
HANDLES AND SPONGES.....\$3 50

No. 11.

BRASS POINT.....\$3 00

CHAIN

HOLDER, {



}.....\$3 50

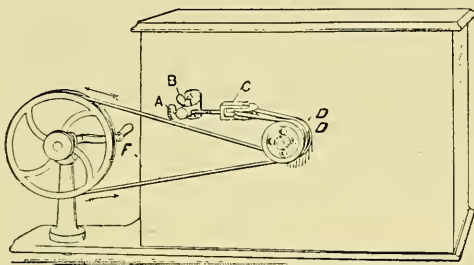
THE ABOVE ELECTRODES ARE FURNISHED WITH STATIC MACHINE ON PAGE 1.

THE STATIC CHARGER, _____

FOR

Charging the Ranney Static Machine.

No. 12.



Price, \$33.33.

When a static machine does not generate electricity (it being in good order) we say it has "lost its charge." This is liable to occur by standing in damp room; by turning the crank attached to the driving wheel in wrong direction (backwards), and from the effect of the atmosphere, which conducts the current and allows it to discharge, during the muggy days of July and August. By use of the Charger the static machine can be charged at once, obviating the use of catskins and other tedious methods. When charging the static see that the handle of the crank stands upright, and *turn to the right*, that is, away from end of the case.

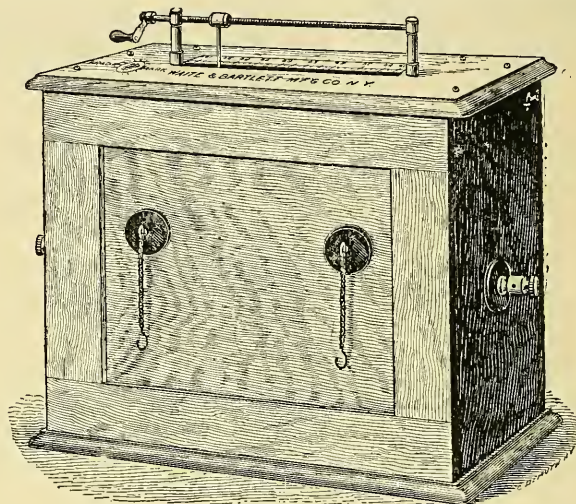
To charge the large machine one of the prime conductors is connected with the prime conductor of the small machine by connecting chains. In some cases it is found necessary to connect the prime conductors of both machines so as to form a circuit. The sliding pole piece of the charger should be drawn as far apart as the hard rubber supports will permit. The pole pieces of the large machine are pushed to within one-quarter of an inch of each other. Now by operating the charging machine the sparks will jump across the pole pieces of the large machine; gradually separate them until you get the longest spark possible from the large machine. Then start the large machine and the usual brush discharge will appear and jump across from the pole pieces. Separate them until the machine is fully charged, then remove the connecting chains.

STATIC CONVERTER

BY

— PROF. A. L. RANNEY, M. D. —

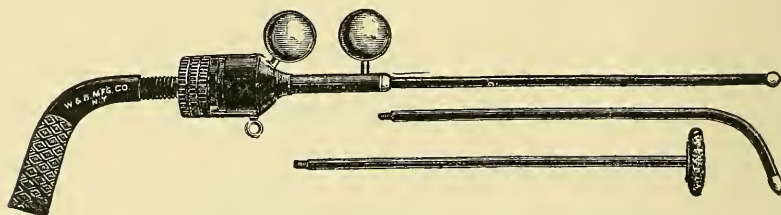
No. 13.



Price, \$33.33.

The advantages of this attachment are that it renders the use of the Morton induced current convenient ; at the same time the spark is hidden from the patient, which is a great advantage when treating those that are very nervous. The dimensions of the apparatus are : Height, $11\frac{1}{2}$ in. ; length, 14 in. ; and width, 7 in. The whole is enclosed in an oak case, and can be placed either temporarily or permanently on a table. The adjustment is regulated by a screw, so that there is no jumping, or suddenly increasing the length of the spark, thereby shocking the patient, as in the old way of moving sliding pole pieces. The cords connecting the electrodes are attached to binding posts on the ends of the case. The connection of the inside of the Leyden jars to the machine is made with suitable chains.

No. 14.

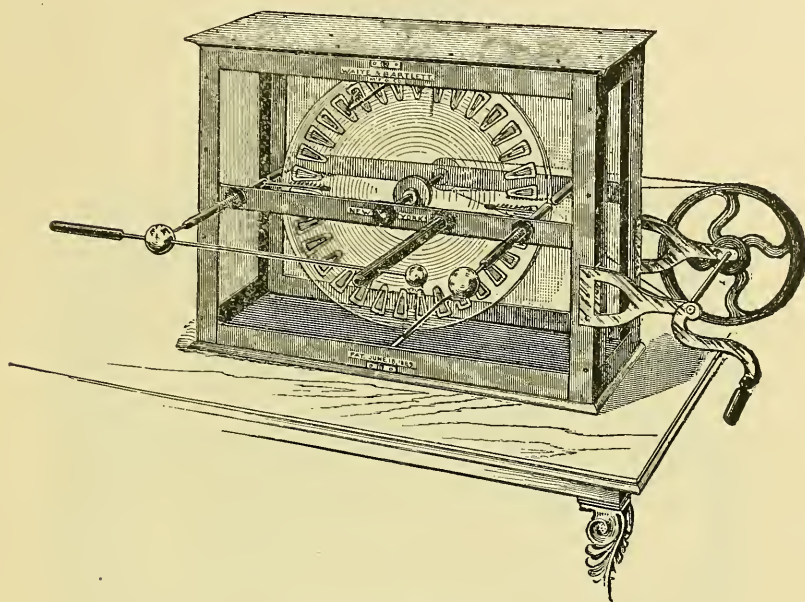


Morton's Pistol Electrode. Price \$10.00.

This electrode is another means of converting static into dynamic electricity, based upon the principle described under the name of "static induced current" by Dr. Morton.

WIMSHURST MACHINE.

No. 15.



Price, \$50 00.

Can be used at the bedside if desired, and in connection with the Converter for induced currents; also as a Charger for the large Static Machine, and for physical demonstrations in schools.

No. 16.



MORTON'S Electrode for Bipolar treatment with Morton's induced current from Static machines. PRICE, \$5.00.

No. 17.



MORTON'S Vaginal Electrode for applying static spark to the Uterus or in other cavities of the body. PRICE, \$10.00.

No. 18.



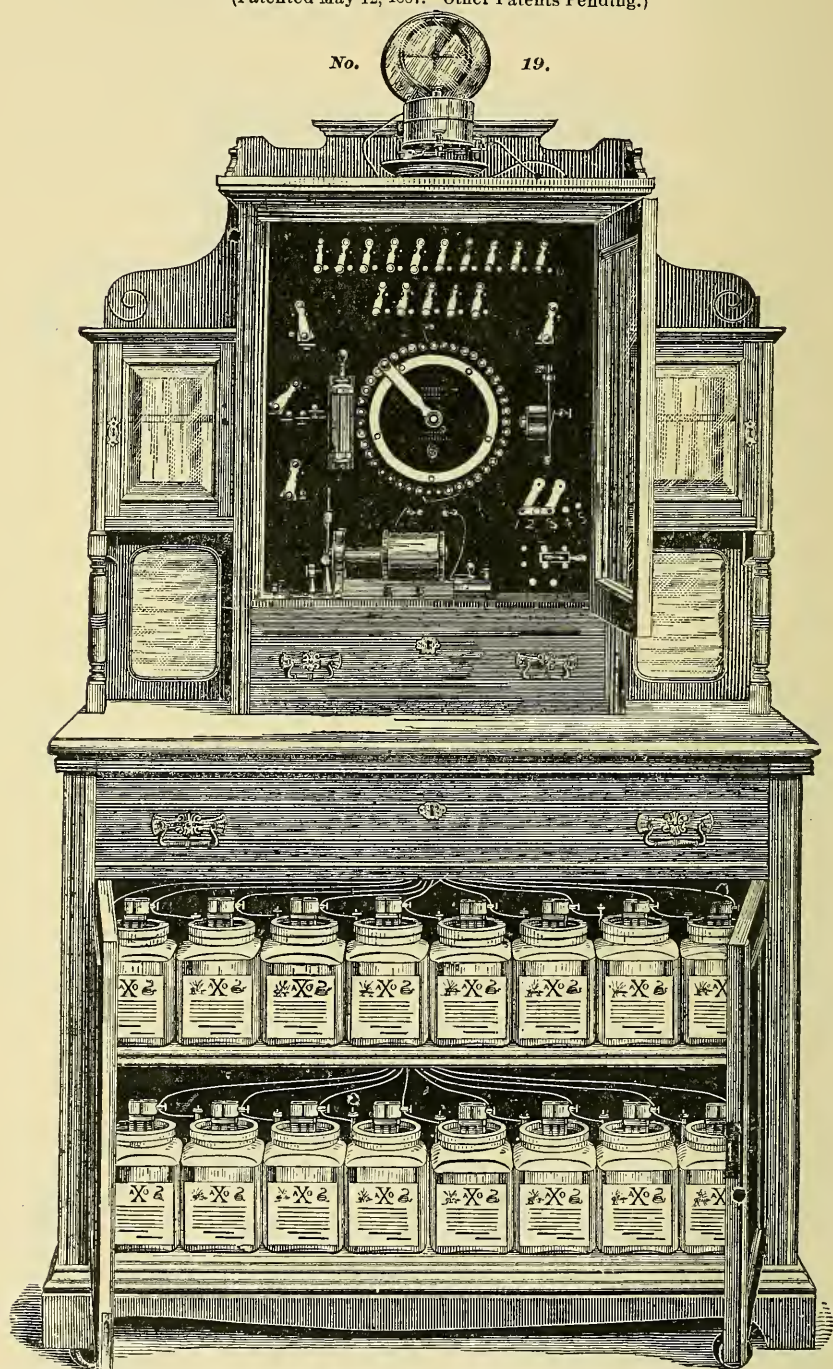
MORTON'S localizing spark Electrode for contracting individual muscles. PRICE, \$10.00.

RANNEY CABINET, \$260.

(Patented May 12, 1887. Other Patents Pending.)

No.

19.



Total Height of above, 69 inches. Length, 41 inches. Depth, 22 inches.
 For Description see next Page. ANTIQUE OAK, OR MAHOGANY.

DESCRIPTION OF THE RANNEY CABINET.

For use of the constant current there are 40 cells of AXO Leclanche battery. These cells are the most perfect of their kind and have stood the test of time and use, and are always furnished.

The current selector is universal, and any cell or cells from the entire series may be used, and thus a great saving of the battery, and uniform wear of same, are obtained. It contains also an automatic rheotome for interrupted galvanic current. The polarity changer or commutator is of substantial make, has rubbing contacts and keeps in order. The german silver wire rheostat has coils measuring from 5 ohms to 5000 ohms resistance each, the entire resistance of all the coils being 16125 ohms, by means of the rheostat and the milli-ampere-meter the resistance of the patient's body may be measured or the condition of cells may be tested. The graphite current controller is used to increase or decrease the current gradually. This cabinet includes a set of Engelmann coils, 3 in number with fine, coarse and medium wire; the coarse wire coil is 66 meters long, the medium coil 200 meters long and the fine coil 600 meters long. The coarse for muscular contraction as for contracting subinvoltuted uterus, fine wire coil to relieve pain, as in chronic pelvic cellulitis, and medium wire coil for a higher electro motor force to overcome resistance for muscular contraction. It is provided with a slow and rapid rheotome, also with a contact key to be operated by the finger. This is used for single impulses, to contract single muscles or groups of muscles, a great help in diagnosis.

This Instrument is also furnished with our No 1 milli-ampere-meter for measuring the current strength. The case contains two small closets with bevel glass doors, two large drawers and a sliding shelf available as a desk. The castors are of large size, making it roll easy. The lower part has doors at the back as well as the front, making the cells accessible, and of easy inspection.

We furnish with this apparatus the following electrodes.

1 Pair Universal handles.	1 Pair Sponge Discs
1 Pair five-foot Conducting Cords.	1 Pair ten-foot Conducting Cords.
1 Set of Gauze Electrodes.	4 Neuman Curved Sounds.
1 Rectal Electrode.	2 Motor Points.
1 Scourge.	1 Gynecological Combination Set.
1 Improved Meter.	1 Mirror for Meter.

We append the names of a few among the many prominent physicians using this form of instrument.

Prof. A. L. Ranney, N. Y. Wm. A. Hammond, M. D., Washington, D. C.

Prof. W. J. Morton, M. D., Post Graduate School, N. Y.

T. J. Martin, M. D., Buffalo, N. Y.

S. N. Brayton, M. D., Buffalo, N. Y.

Paul. F. Munde, M. D., N. Y.

Prof. Riggs, M. D., St. Paul, Minn.

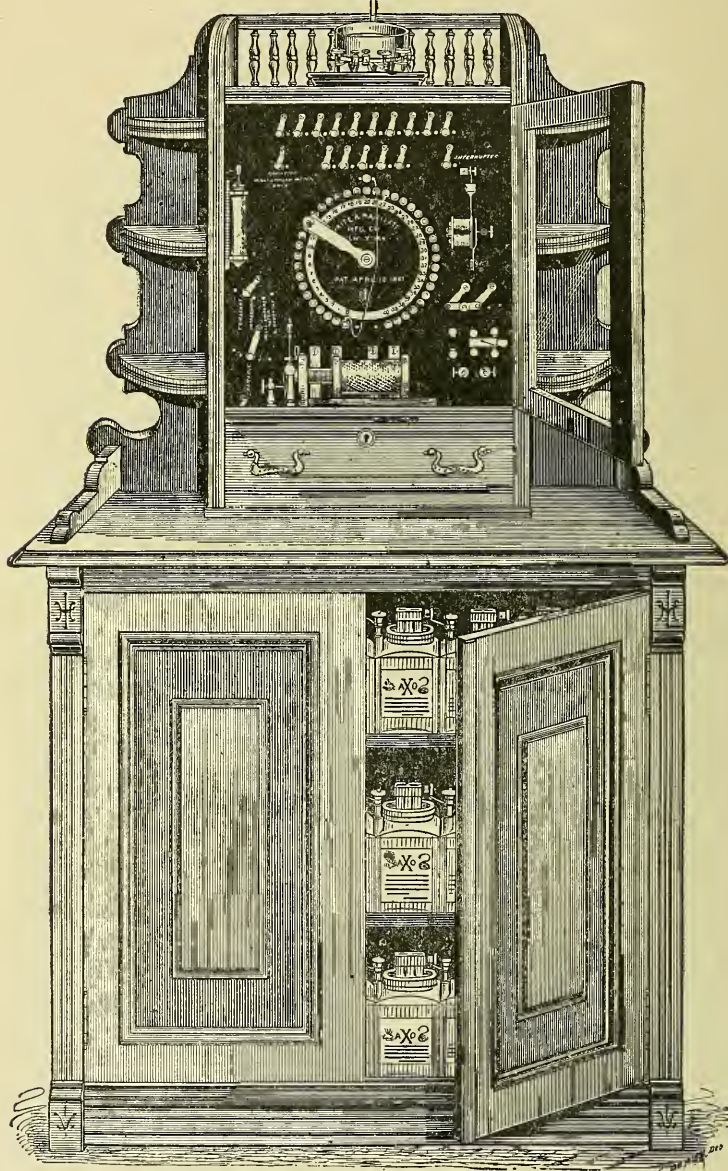
Hunter McGuire, M. D., Richmond.

MUNDE CABINET.

No.



20.

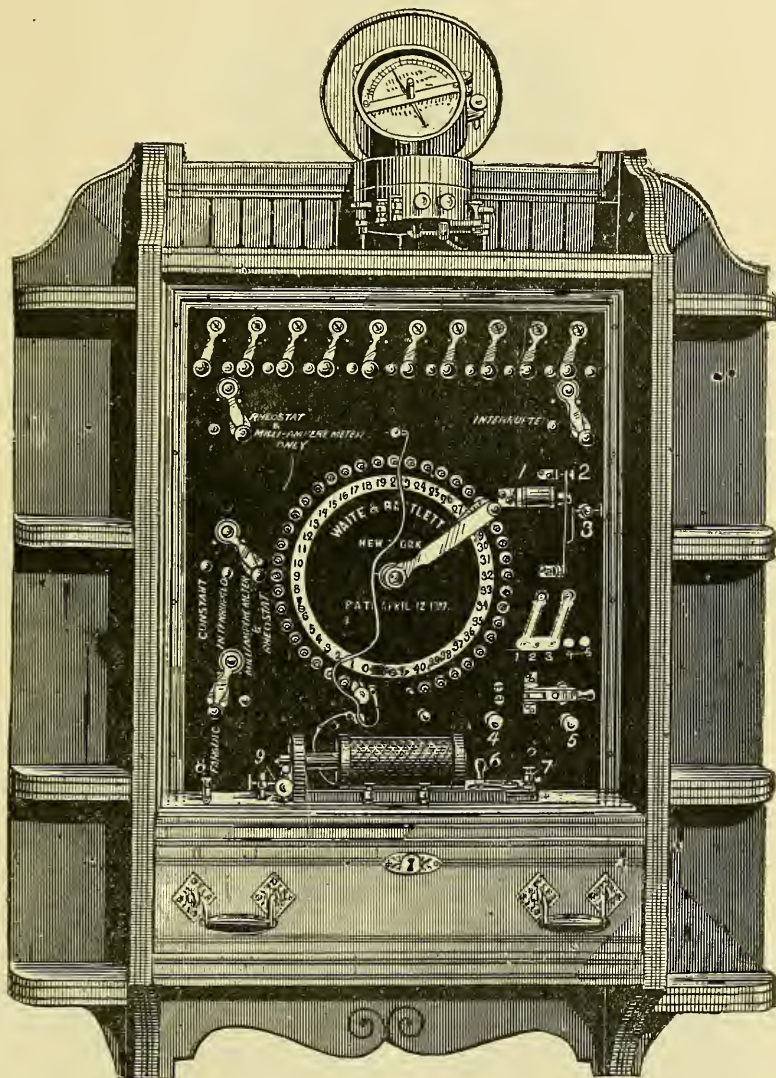


Total height 63 inches, width 40 inches, depth 13 $\frac{1}{2}$ inches. The switch-board of this Cabinet contains everything that is in our Ranny Cabinet excepting Englemann coils. No Electrodes accompany this Cabinet, excepting one pair of handles, cords, and sponges.

PRICE\$215.00

HAMMOND WALL CABINET.

No. 21.



The above cut represents the Switch Board in our perfected Cabinet, in Wall Cabinet form Cells may be put in any convenient place.

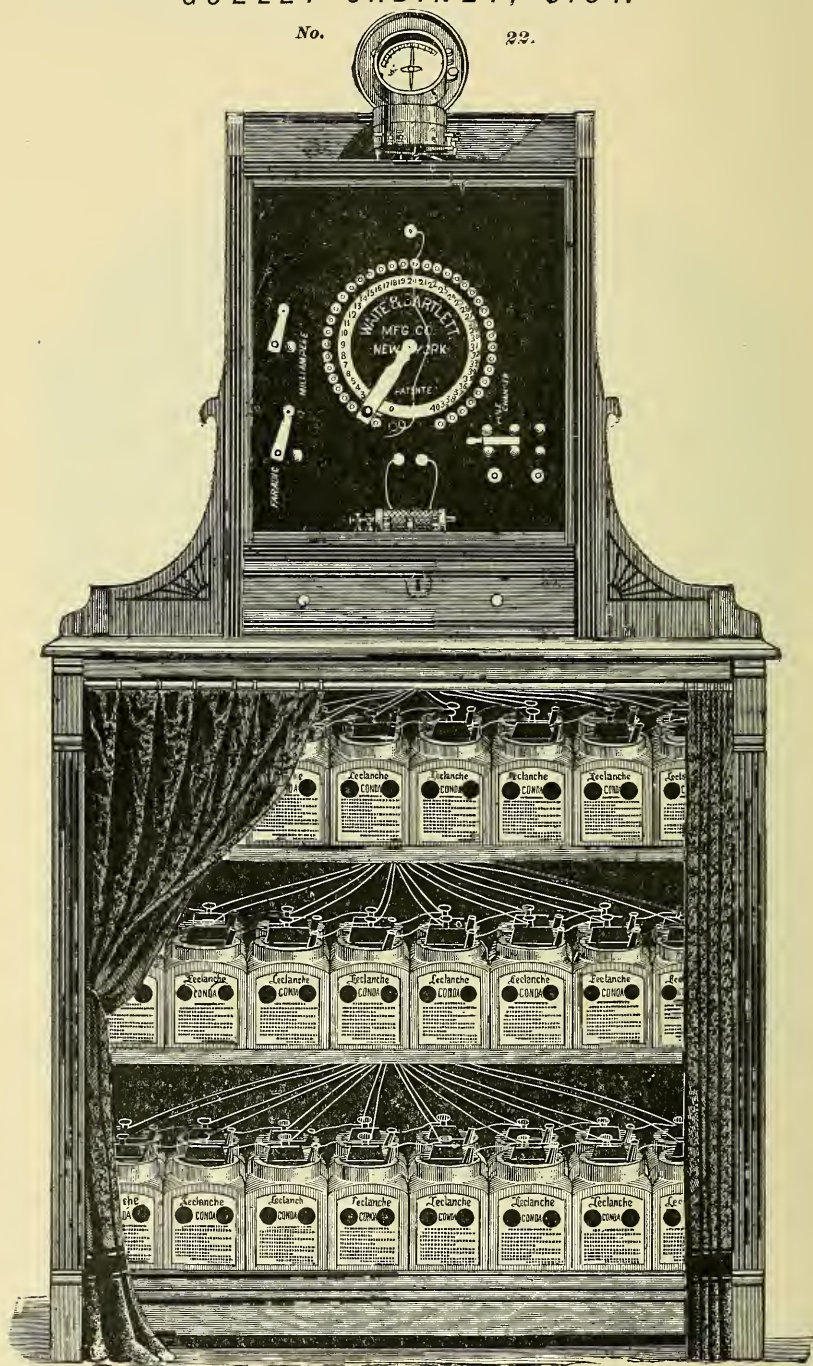
PRICE.—COMPLETE, WITH CELLS, AS SHOWN ABOVE, \$200.

Height, 34 inches. Width, 29 inches. Depth, 8 inches.

GOELET CABINET, \$134.

No.

22.



Total Height, 59 inches. Width, 37 1-2 inches. Depth, 13 1-4 inches.
(Patented April 15, 1890.)

THE GOELET FLOOR CABINET

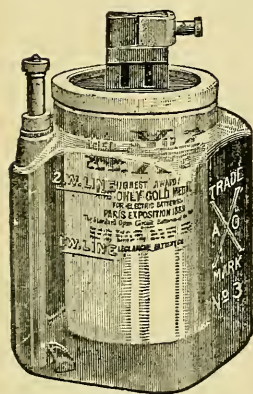
Has 40 cells of Genuine Leclanche Gonda Porous Cup Battery, Universal Switch Board, Pole changer and No. One Faradic Coil. It is also furnished with our No. 2 Milli-ampere-meter. It has a brass rod and rings, by means of which a curtain may be attached to cover the cells. This Cabinet is put on the market to meet the demand for one cheaper than the floor or wall cabinet. A DuBois-Raymond coil will be furnished for \$10.00 extra, a water rheostat for \$5.00 extra, and a galvanic vibrator for \$10.00 extra.

If you contemplate purchasing a cabinet, ascertain always what it contains, and you will be neither disappointed nor misled. All of our goods are warranted to be as represented. The Axo cells will be furnished with above Cabinet for \$8.00 extra.

The cells represented below are used in our Cabinets, the Axo with all except the Goelet style, with which the Gonda Porous Cup Battery is used. We have adopted these cells because time and use have proved them to be the best for electro-therapeutical work. Some of the leading specialists have had them in constant use for five years, and they still remain in fine working condition.

AXO BATTERY.

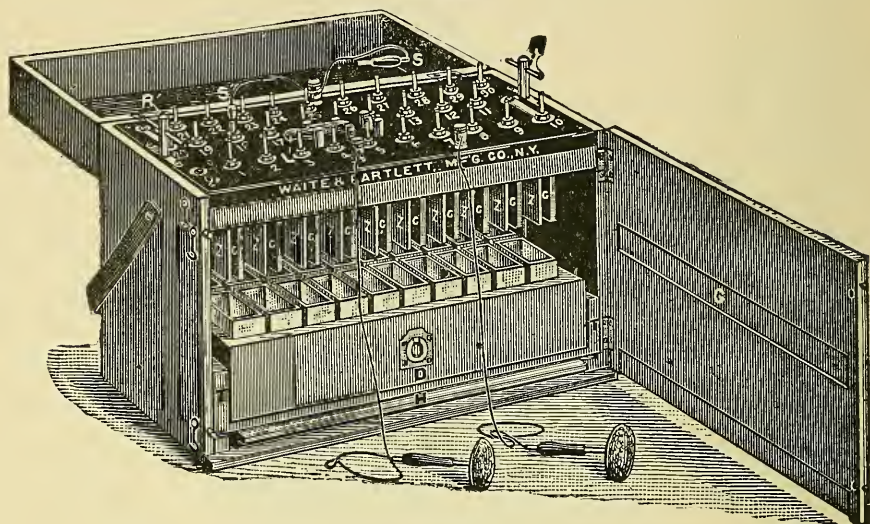
"GONDA POROUS CUP" BATTERY.



"Axo" Battery Complete "Axo" Porous Cup. Genuine "Gonda Porous Cup" Battery complete.

Genuine Gonda Porous Cup and Zinc.

No. 23.



PLUG AND SOCKET GALVANIC BATTERY.

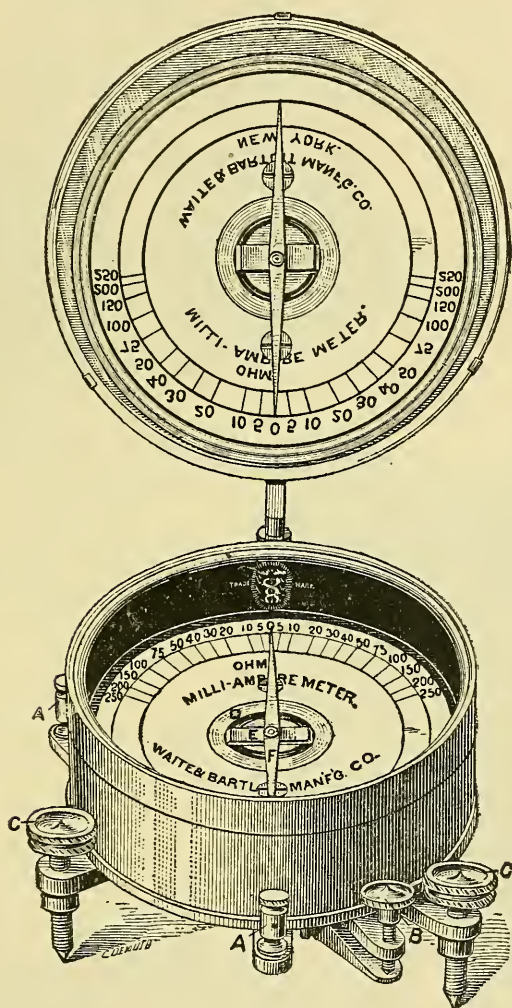
6 Celled	Price, \$12 00
12 "	20 00
16 "	24 00
20 "	30 00
30 "	38 00

Above engraving shows a convenient form of portable Galvanic Battery. It is represented with the door open showing the construction of the various parts. The cells are in a tray which is supported by an outside tray or shelf, into which the cell tray slides and can be readily withdrawn without attention to any mechanical device whatever. The lifting rods, R, R., screw into the ends of the outside tray, and by raising the same the cells are also raised until the elements are properly immersed in the fluid contained therein. The box contains a compartment at the bottom into which the hydrostat board H is put when not in use.

When the battery is to be carried about, this board, H, is placed on the top of the cells with its rubber padded side down; the two rods, R, turned, raising the top of the cells tightly against the padded board, thus sealing them. The battery may then be carried without spilling. The 30 cell, of the above type, will give sufficient current for Apostoli's method of treating fibroid tumors and other gynecological work. The battery is furnished in handsome antique oak, or mahogany case, finely polished, and in six different sizes. We guarantee these batteries to be first class and to give satisfaction.

No. 3 MILLI-AMPERE METER.

No. 24.

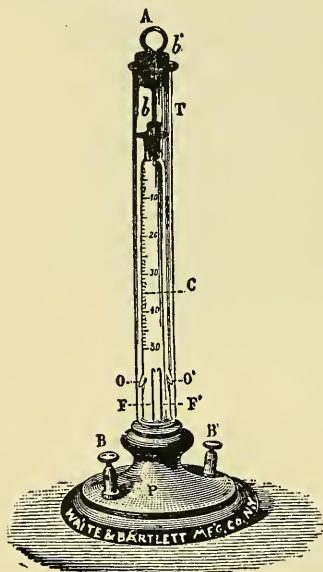


Price, \$27.00.

This instrument is an improvement on our No. 2. The needle is so arranged that it swings in a block of copper and which has the effect of reducing the number of vibrations of the needle making it quite dead beat. This is a great advantage in treatment of nervous diseases.

COULOMB METER.

No. 27.

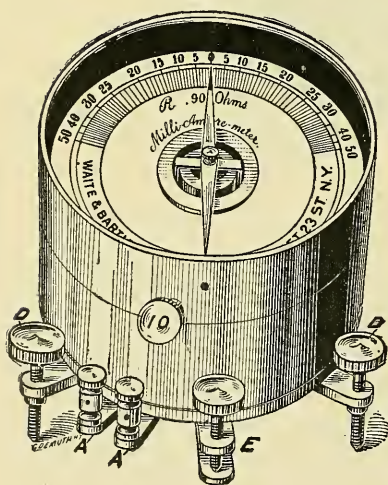


It consists of two glass tubes of different diameters, the narrower one is inside the other and graduated in Coulombs, *i e.*, degrees corresponding with the amount of gas generated by one ampere in one second, and communicates with the other by means of two apertures. The one at the top can be closed with a stopper. The lower part of the narrower tube contains two platinum wires, between which the current passes as soon as the tubes are filled with water. The gas developed in consequence of the decomposition soon rises in the inner tube, and its quantity may be read from the scale. The stopper of the inner tube being removed for a moment, the tube refills itself with water, and can be used for a second trial at once. If a current passed through the instrument for two seconds, and the amount of gas generated was 4.7 degrees, the strength of the current was 4.7 amperes.

Price \$14.00.

IMPROVED NO. 1 MILLI-AMPERE-METER.

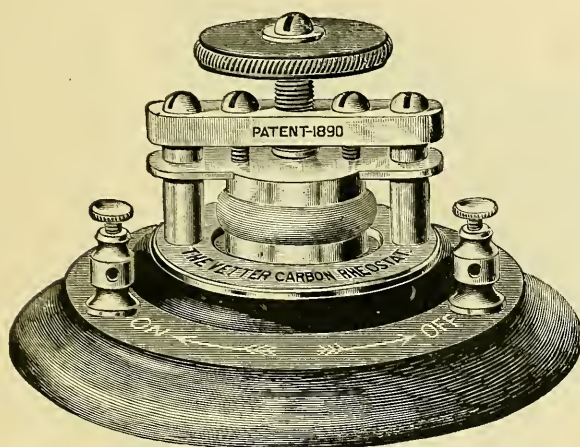
No 26



This Meter has been greatly improved by an arrangement, in which the needle swings in a recess in a copper block, by which means it is made more dead beat. It comes to rest after two or three oscillations of the needle. It is in a handsome all metal case, of highly finished brass and is of superior scientific mechanical construction. The first readings are from a fraction of a milli-ampere up to 50, milli-amperes, and with the shunt, it reads to 500 milli-amperes. All our instruments are calibrated individually, marked by hand, and for this reason they are uniformly correct.

Price \$32.00.

No. 27.



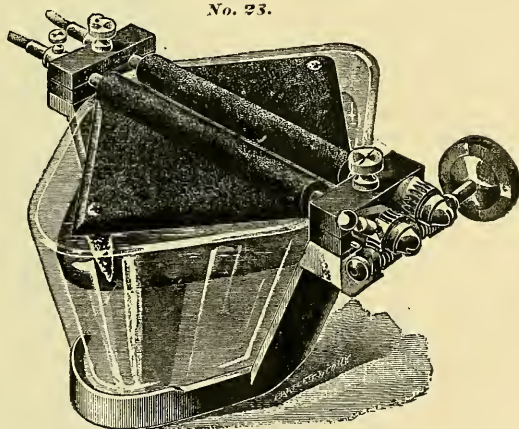
The Graphite Current Controller represents the carbon rheostat which contains in a rubber pouch granular carbon which is compressed and relaxed by moving the screw as indicated. This rheostat controls the current very nicely.

PRICE - \$20.00

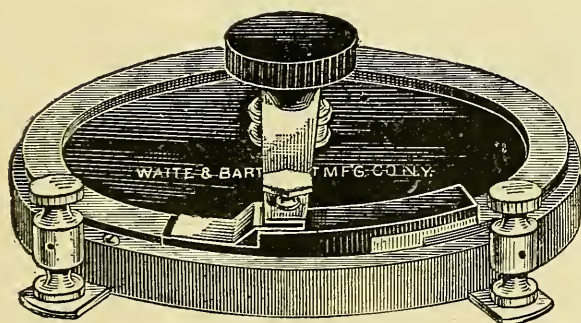
Improved Baily rheostat. This is the best form of water rheostat made; it is easily cared for; the connection being carbon and tin will not oxidize, and the water can be changed from time to time; it gives perfect satisfaction and only need be seen and used to be appreciated

PRICE - \$13.33

No. 23.



No. 29.



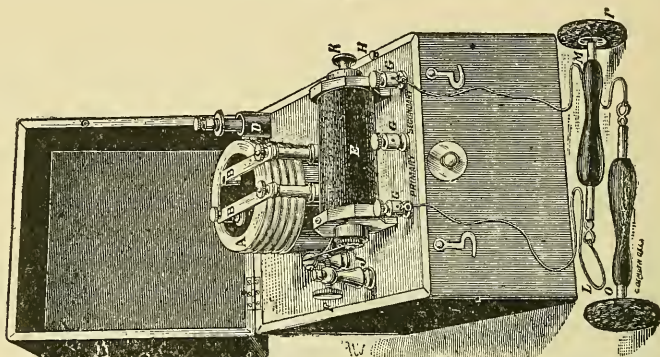
Goelet's Modified Rheostat.

Figure 135. This cut represents a Graphite rheostat with slate base, which is giving good satisfaction. This rheostat can be used with any number of cells in the circuit. It is durable, easily kept in order and reasonable in price.

All that is necessary to renew the Graphite, is to take an ordinary carpenter's leadpencil and rub it on the path or rather on the raised portion of the slate upon which the spring presses, the resistance can be increased or decreased by the amount of graphite rubbed on the surface.

PRICE \$12.22

No. 30.



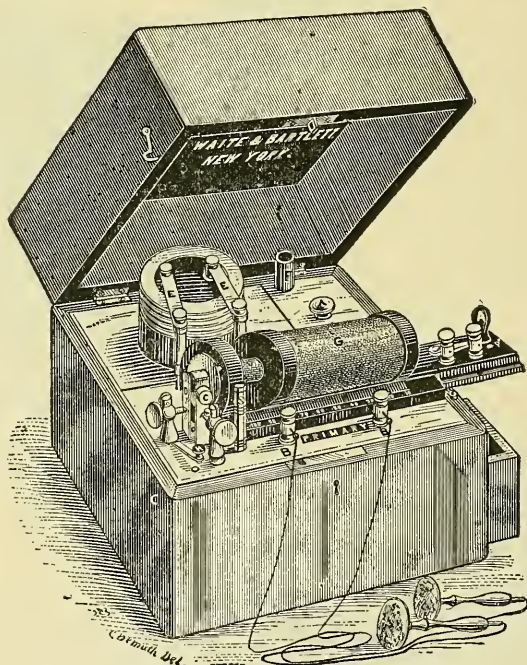
Family Battery.

PRICE, INCLUDING CORDS AND HANDLES, \$10.00.

This Battery is made in Solid Oak or Mahogany Case, and the workmanship of this, as well as of all our Batteries, is of the highest order. For durability and cheapness it has no superior.

No. 2 Physician's Faradic Battery.

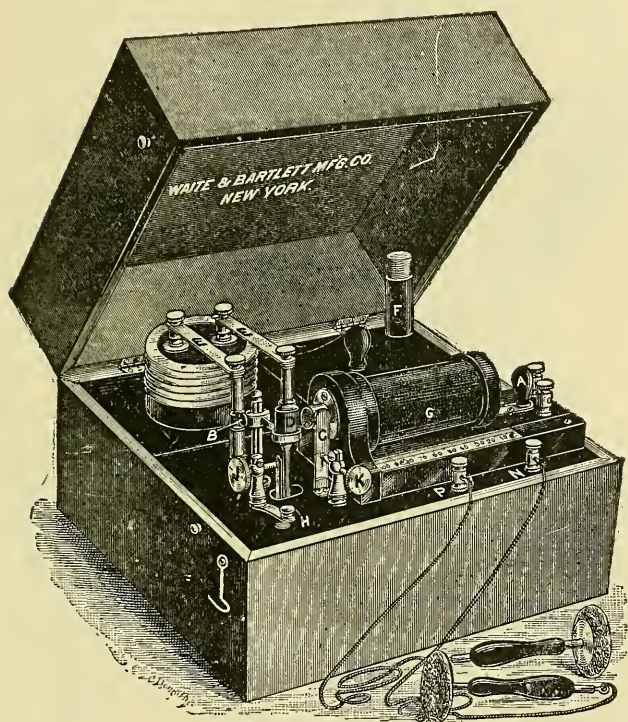
No. 31.



PRICE, \$20.00.

This is one of the most complete Batteries for medical use made in portable form. It has two interrupters, fine and coarse, also single contact key for testing muscles or groups of muscles. The cell of the Battery is made perfectly water-tight, so that the solution can be carried therein without any danger whatever of spilling. The advantages it gives are found in no other instrument, and it needs only to be seen to be appreciated.

No. 32.

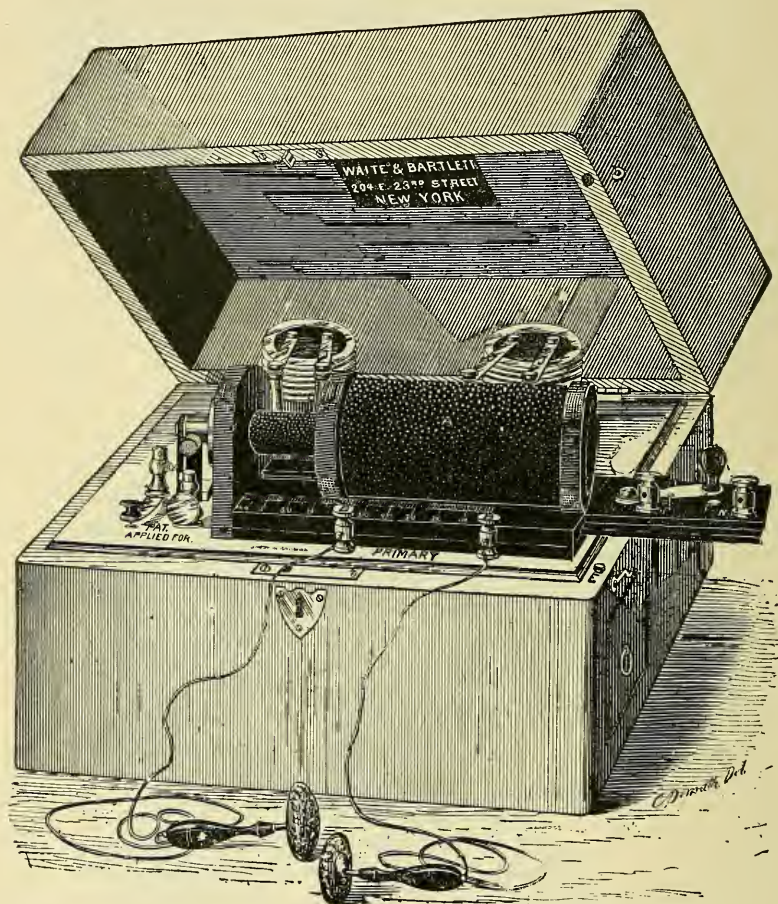


No. 3 PHYSICIANS' FARADIC BATTERY.

Price, \$27.00.

This is of the same construction as No. 2, with the addition of a very fine rheotome, that allows of a wide range of slow interruptions.

No. 33.



NEW No. 4 FARADAIC BATTERY.

Price, \$28.00.

Has two cells, and extra large Du Bois-Reymond coil fast and slow vibrators, and single contact key for diagnosis and muscle testing.

THE ENGLEMAN PORTABLE FARADIC BATTERY,

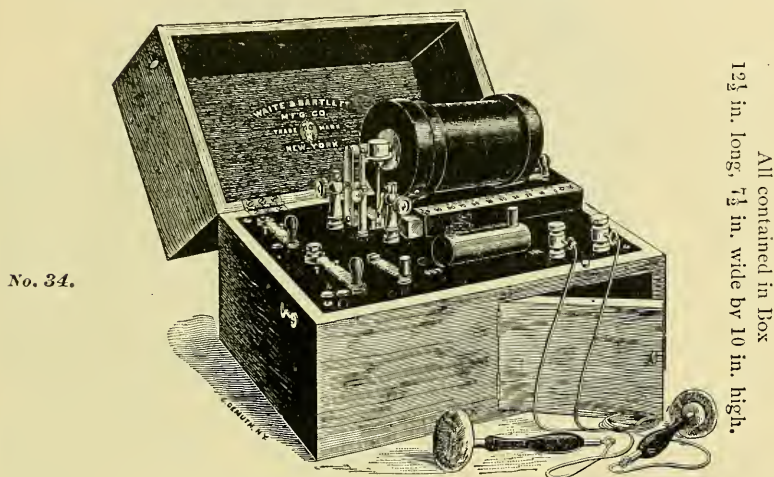
With High-Tension Coils,

CONSTRUCTED AFTER THE DATA GIVEN IN

"The Use of Electricity in Gynaecological Practice,"

BY

Dr. G. J. ENGLEMAN, St. Louis.



Price \$66.66.

The above mentioned instrument is the best and most convenient Faradic Battery ever presented to the notice of the profession. It has the following named accessories in its construction, by which the physician can obtain a wide range of therapeutical effect: *The Three Separate Coils* (coarse, medium and fine) vary in length, size and in effect are undeniably different. The diameter and length of wire on each coil is also marked in millimeters and meters. Either of the three coils may be used according to the effect it is desired to produce. Use coarse coil for muscular contractions—as for contracting down a subinvolted uterus with medium speed of interruptions. Use fine coil to relieve pain, as in cellulitis; use medium coil when muscular contractions are to be produced, and the parts are too sensitive to allow use of coarse coil.

The *Fine and Slow Vibrators* are both controlled by a *Rheostat* by which the speed of both can be regulated and the strength of the current increased or modified at will of the operator.

The Contact Key is used for single impulses to contract a single muscle or groups of muscles.

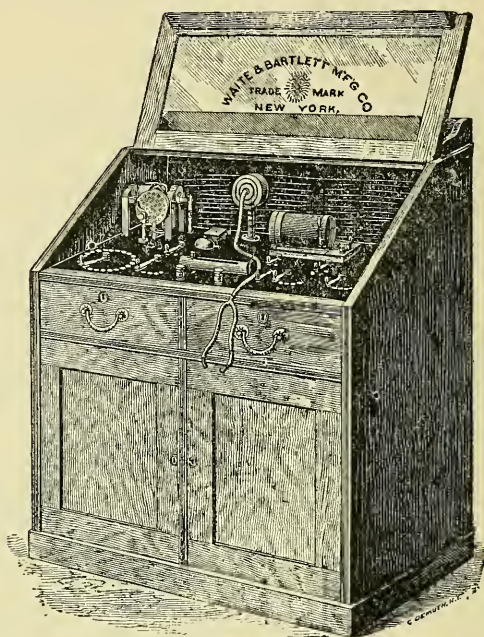
The two dry cells, when exhausted, can be replaced with but little expense, and without trouble, the connections being made expressly for this purpose.

The Fine Coil No. 36, 4,500 feet long (described in connection with the Engleman Cabinet on page 22) is furnished in place of the fine coil formerly furnished with the instrument.

The Engleman Cabinet Faradic Battery,

With High-Tension Coils.

No. 35.

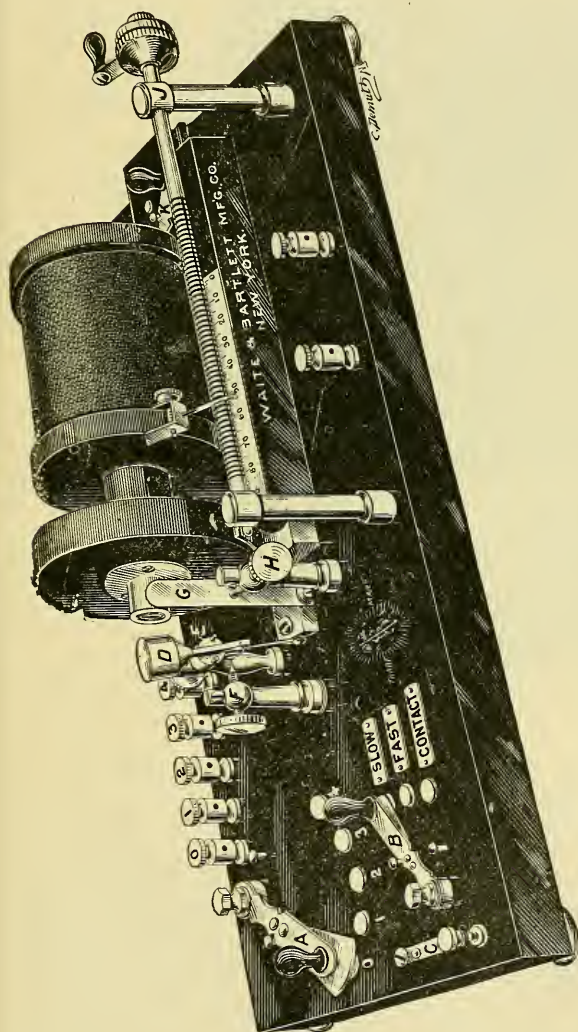


Price, \$213.33.

This instrument has been constructed by us in accordance with suggestions made by DR. G. J. ENGLEMAN, of St. Louis (the well known specialist), being the result of several years of practical experiment in testing coils, etc., as to their therapeutic and physiological action. It consists of an interrupter so arranged that from one to one hundred thousand impulses per minute can be obtained and registered. Second: an alternator which produces the sinusoidal current, and is the only instrument from which these two currents can be obtained. Third: a Rheostat in the primary circuit that controls the current passing through the primary coil. Fourth: Three Coils (Fine, Medium and Coarse). The first mentioned has nine thousand winds of fine wire, No. 36, tapped at 1,500, 3,000 and 4,500 feet, each length controlled by a switch. The Medium Coil, with 1,510 winds of No. 22 wire, is 650 feet long. The Coarse Coil with 480 winds of No. 15 wire, is 197 feet in length. Fifth: the Houghton attachment for Aural Massage.

We take great pleasure in presenting this apparatus to the medical profession, knowing that it is the best apparatus of its kind in the world. It is useful in gynecology for relieving pain, and also has its uses for the Neurologist. Faradic apparatus, when the several thicknesses of wire are wound on one coil, cannot give the same results as when wound on separate coils, for the reason that the diameter of the coil is increased so much that one wind of fine wire would make three or more winds of the Engleman coil. When it is understood that the winds are what gives the E. M. F. it is easy to see which coil has the greater E. M. F. The nearer the secondary is to the primary coil the greater the quantity. This fact renders the Engleman coil vastly superior to all others in its effect.

ENGELMANN FARADIC APPARATUS.



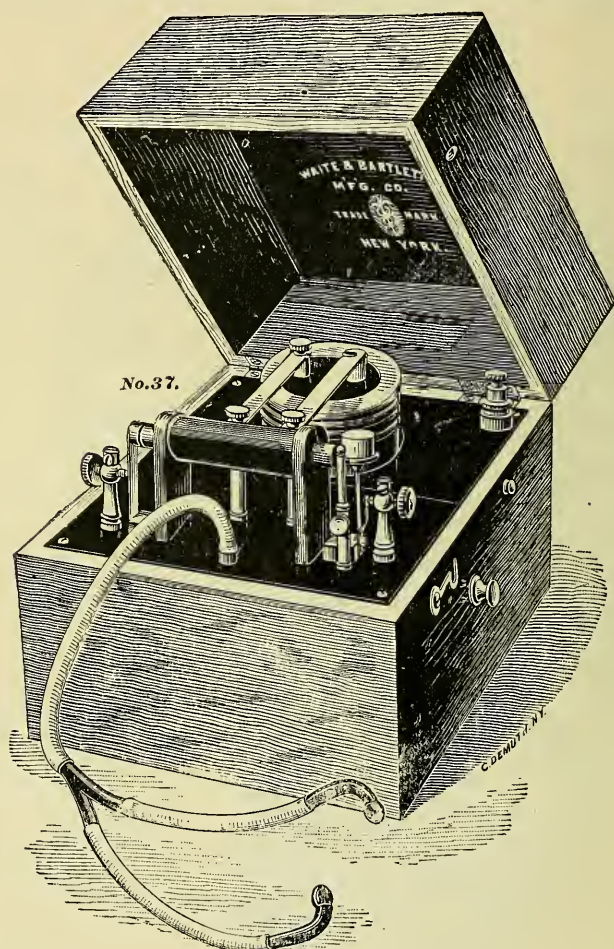
No. 36.

FIGURE 134, represents our Engelmann Faradic apparatus arranged on a base to be placed on a table, and consists of three vibrators, one rapid the other slow and the third a single impulse key, for contracting a single muscle or a group of muscles. It also has a screw by which the secondary coil can be moved over the primary slowly so as to increase the current almost imperceptibly. There are three coils that go with this apparatus, fine, medium and coarse wire. Full description accompanies the apparatus for setting up and using.

By this form of construction we are enabled to have any number of coils which may be wound with any desirable length and size of wire. There is also a wire resistance in the primary circuit

PRICE \$60.00.

DR. HENRY C. HOUGHTON'S
APPARATUS FOR AURAL MASSAGE.

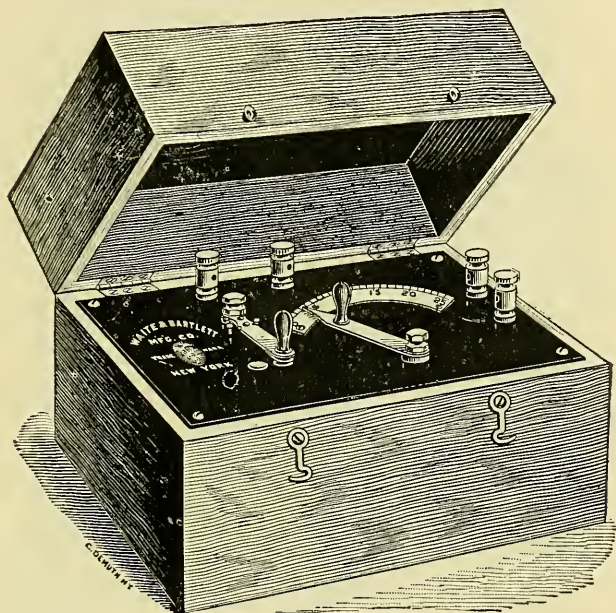


The above cut represents an instrument for the massage of the ear drums, and has been perfected under the supervision of Dr. H.C. Houghton, an eminent aurist of this city. Specialists on diseases of the ear can not afford to be without it; it is simplicity itself, and so arranged that the sound impulses can be increased or diminished at will (either rapid or slow) as may be desired.

It is in portable form, convenient for transportation. In catarrhal deafness and tinnitus aurium it is found efficacious.

Price \$33.33.

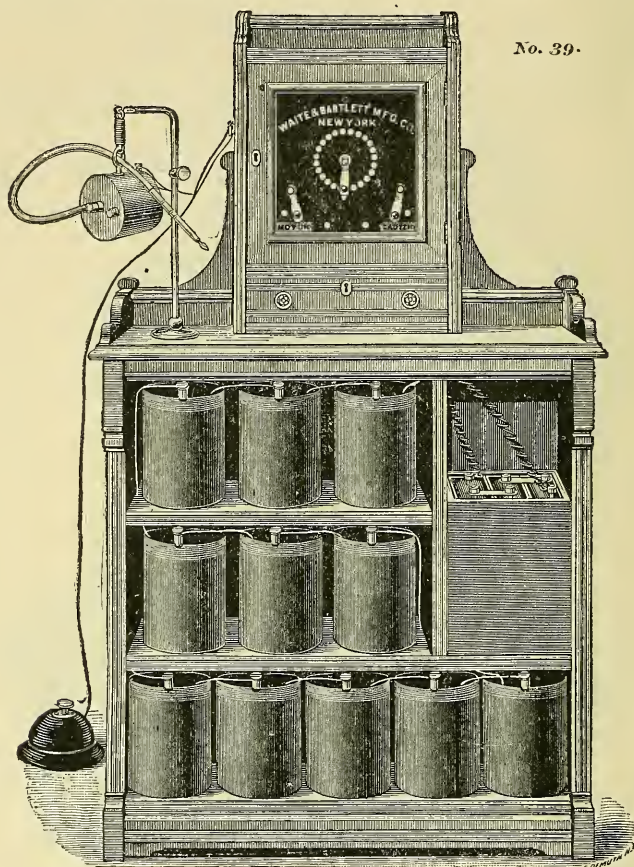
CONVERTER FOR UTILIZING THE ALTERNATING CURRENT FOR CAUTERY PURPOSES.



No. 38.

Where the alternating current can be obtained it is a very convenient apparatus for Electro Cautery operations. It can also be used for lighting small electric lamps for examining cavities of the body. This instrument is simple in its construction, always ready, and requires no attention. The burners and loops lasting much longer than those used with other forms of storage or plunge batteries.

Price \$26.66. Cords, Handles, Knives and Lamps are extra.

THE RAY STORAGE CAUTERY CABINET FOR NOSE AND THROAT WORK.

Total height, 59 inches. Width, $37\frac{1}{2}$ inches. Depth, $13\frac{1}{4}$ inches.

Patented April 15th, 1890.

PRICE COMPLETE \$173.00.

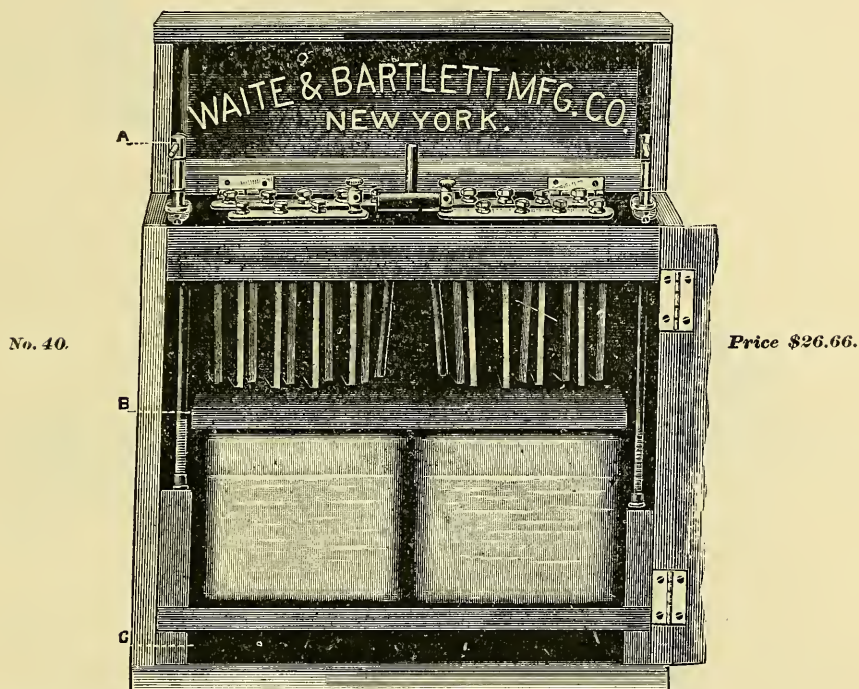
This cabinet was devised to fill the wants of Dr. J. M. Ray, of Louisville, Ky. It is so constructed that the charging cells are of easy access, also the storage battery itself, is in plain sight, and so arranged, that the connections are protected from all gases, thus avoiding oxidation of the connections in the storage battery.

The switchboard or rather the Rheostat, is so arranged, that you can throw the resistance in gradually, thus graduating the current or the amount of heat you require, to a nicety. By a separate switch you can use the current for heating the burners. The other switch throws the current on the motor, which is on a stand to the left of the cabinet, as you face it. This is the most complete instrument of the kind, that has ever been put on the market. This cabinet consists of a finely finished oak case, a 3 cell storage, 11 charging cells, motor, stand, floor push, and flexible shaft complete, 2 drills, 2 burrs, 2 trephines, also one loop and handle, 1 plain handle and 6 burners.

We have an extra attachment of a shelf, suggested by Dr. Ray, that is to be fastened to the front of the cabinet, on which you can place your spray tubes and medications, which makes it a very convenient, useful, and handsome attachment.

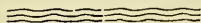
THE ONLY PERFECT PLUNGE BATTERY FOR ACTUAL CAUTERY WORK.

Designed by W. H. KING, M.D., New York City.



WHAT WE CLAIM FOR IT :

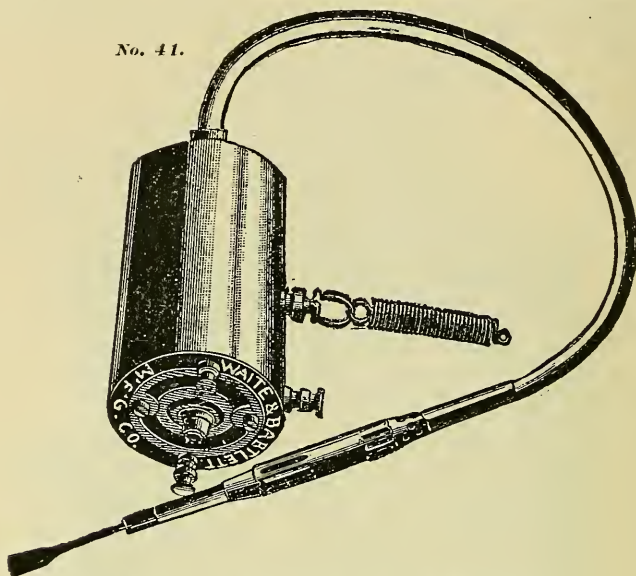
- That there is **no danger** of spilling the acid.
- That the zincs can be replaced in **five minutes**, and that it is impossible to make a mistake in replacing them.
- That there are no connections **under** the base.
- That there are **no wires** used in its construction.
- That it is the most convenient shape for carrying, of any battery ever made.
- That it will bring to a **white heat** a platinum wire **three and a half inches long** and light any four-volt lamp.
- That it is the **simplest** and **prettiest** battery in the market.



SOMETHING NEW IN CAUTERY KNIVES. ✦ ✦ ✦

These knives are designed by Dr. Dessar, of New York City, and are the only ones made that are **thoroughly antiseptic**. They are nickle-plated without the customary thread insulation, and can be dipped in any antiseptic solution. (*See page 42.*)

No. 41.



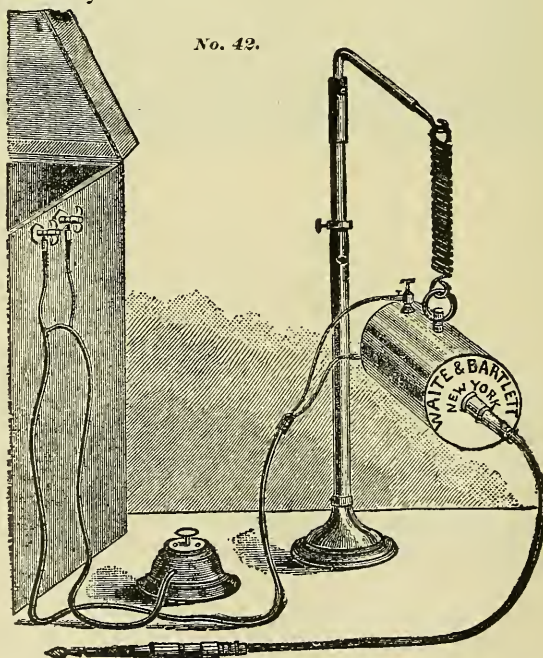
NASAL ELECTRIC MOTOR.

As suggested by H. Holbrook Curtis, M. D.

This Motor has no dead point and starts from any position of rest.

PRICE, complete, of Motor, Hand-piece, Cable and Floor Push.....	\$50.00
" Stand for Motor.....	10.00
" Storage Battery for Motor.....	\$80.00

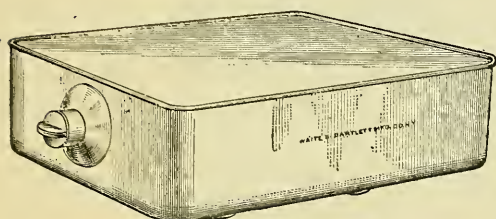
No. 42.



Above cut shows our Nasal Motor with flexible shaft and hand piece stand and floor push.

GOELET WARMING PAN.

No. 43.

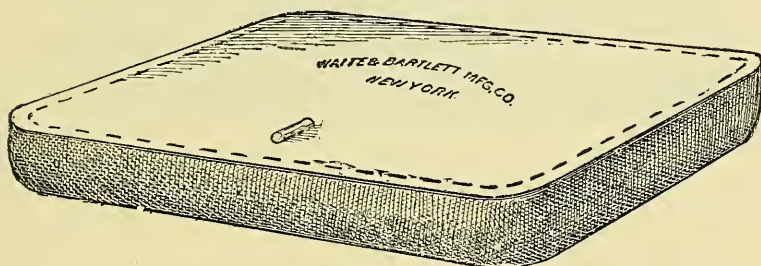


GOELET WARMING PAN, for warming clay electrodes. It is 8in. by 12in. and 3 1-2 in. deep, and has a stopper which can be unscrewed, and filled with hot water. The bottom has cork feet, to prevent injuring varnished surfaces. It is almost indispensable in treating Gynæcological cases in cold weather.

Price \$4.00

DR. SAUNDERS' FELT PAD.

No. 44.



Is a pad made of felt designed by Dr. Saunders of "Mount Sini Dispensary". The special advantages of these abdominal pads, are:

1st, It is always ready for use. 2nd, Its durability. 3rd, Its flexibility. 4th, Lightness. 5th, The painlessness of its application when compared with other dispensing electrodes. 9th, The strongest current allowable in medicine, can be easily passed through it. See American Journal of Obstetrics" Nov. 3rd, 1892. Price \$4.00.

No. 45.



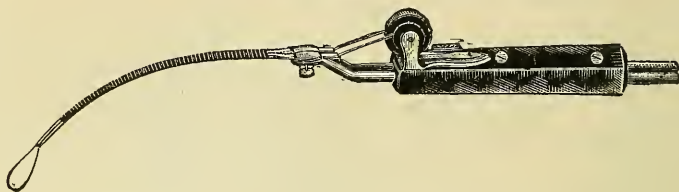
IS A PLATINUM INTRA-UTERINE ELECTRODE, with platinum needle; this is arranged with sheath, so that it can be adapted to any depth of the uterus. Price \$15.00. Designed by Dr. Goelet.

No. 46.

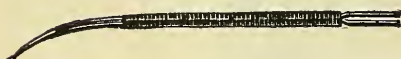


GUNNING BI-POLAR VAGINAL ELECTRODE. It can be separated so that the conductors will be at any distance desired from each other. It is made of hard rubber and it is thoroughly antiseptic. Price \$4.00.

No. 47.



No. 48.



No. 49.



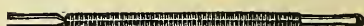
No. 50.



No. 51.



No. 52.



ELECTRODES AND COMBINATION HANDLE.....\$20 00

No. 53.

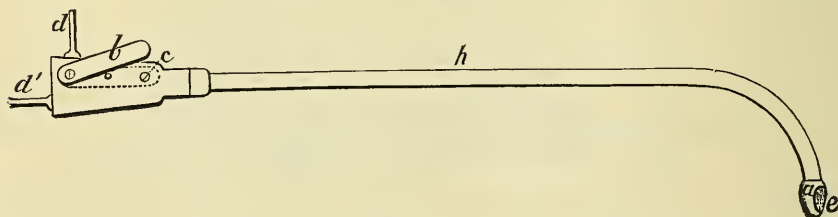


SMALL KNIFE HANDLE.....\$3 50

BURNERS, each.....1 50

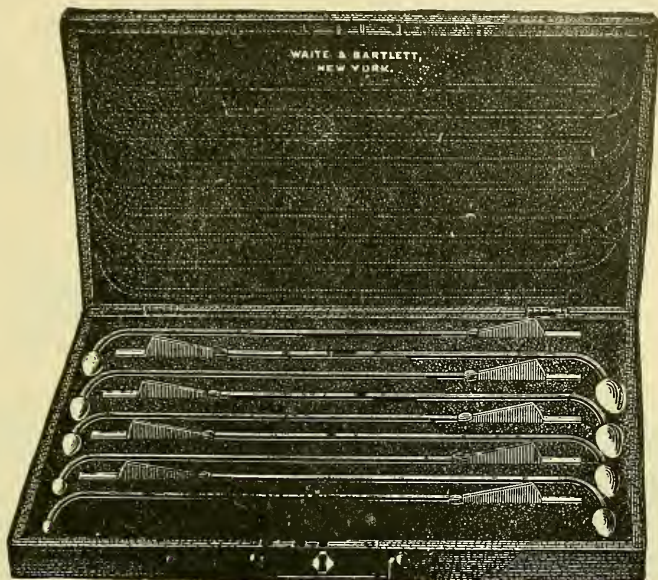
SNARE HANDLE AND LOOP.....12 00

No. 54.



NEWMAN'S CAUTERY. ELECTRODE, for enlarged Prostate \$13 33

No. 55.



Dr. ROBT NEWMAN'S CURVED SOUNDS, in Case, No. 11 to 28.....\$20.00

No. 56.



No. 57.



No. 58.



Dr. ROBT NEWMAN'S SOUNDS FOR ELECTROLYSIS OF STRICTURE.

Price of Curved, each.....\$2 00 | Straight, each.....\$1.50

All Finished in Polished Hard Rubber.

No. 59.



NEWMAN'S TUNNELLED CATHETER ELECTRODE.....\$5 00

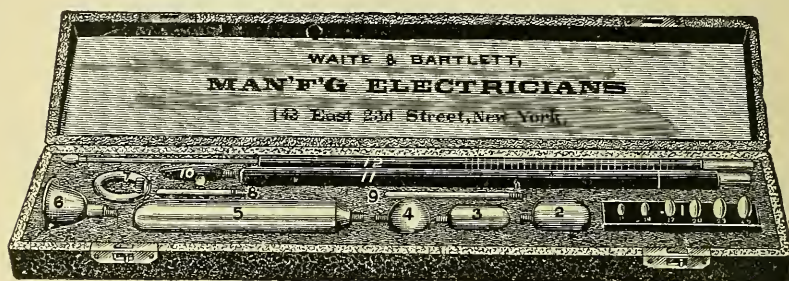
No. 60.



DR. KING'S RECTAL ELECTRODE, arranged so that an injection of a solution of Chloride of Sodium can be used, the current being distributed by the solution used for constipation or paralysis of Rectum.

PRICE, \$5.33.

No. 61.



COMBINATION GYNECOLOGICAL SET.

The above set comprises instruments devised and used by Drs. P. F. Munde, T. G. Thomas, and A. D. Rockwell, of New York City, and Dr. Henry Fry, of Washington, D. C.

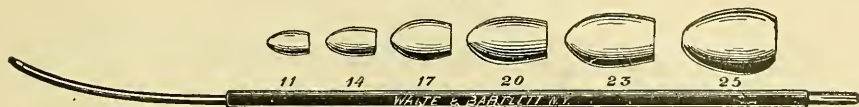
The Electrodes are useful in the treatment of stenosis, endometritis, ovaritis, chronic pelvic cellulitis, procedentia, displacements, and relaxed conditions of the vaginal walls.

The advantages of this set are that all the attachments fit universal handles. The Fry Stenosis set has interchangeable tips from No. 11 to No. 28, French scale. The stenosis sound is flexible a distance of four inches, to allow for the various curves of the uterine canal, the remainder of the handle being rigid. It thus gives the operator a superior control of the electrode.

The vaginal electrode, ovarian ball point, uterine cup and needle holder, are all interchangeable on a rigid handle of extra length, thus making it a very effective and convenient uterine set.

PRICE, \$13.33.

No. 62.



DR. FRY'S INTRA UTERINE ELECTRODE FOR STENOSIS.

Price.....4 00 | In Case.....\$6 00

No. 64.



APOSTOLI'S BIPOLAR VAGINAL ELECTRODE FOR FARADIC CURRENT.

PRICE.....\$4 00

No. 65.



APOSTOLI'S BIPOLAR INTRA-UTERINE ELECTRODE FOR FARADIC CURRENT.

PRICE.....\$4 00

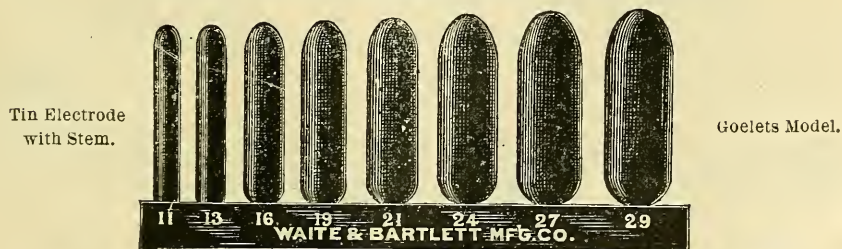
No. 66.



APOSTOLI'S PLATINUM ELECTRODE FOR GALVANO-PUNCTURE AND INTRA-UTERINE USE, IN ELECTROLYSIS OF FIBROID AND CYSTIC TUMORS.

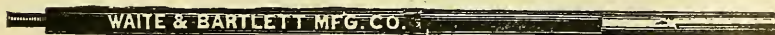
PRICE.....\$28 00

No. 67.



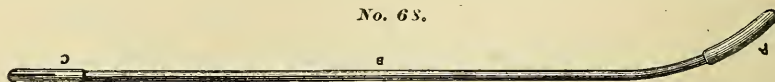
Tin Electrode
with Stem.

Goelets Model.



PRICE, \$7-33.

No. 68.



GOELET'S INTRA-UTERINE ELECTRODE.....\$2 66

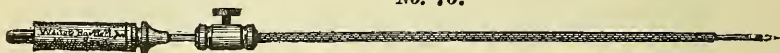
No. 69.



GOELET UTERINE PUNCTURE NEEDLE.

RUBBER COVERED, WITH MEASURING SHIELD.....\$7 50

No. 70.



GOELET'S CANNULA ELECTRODE.

With Silver Cannula and Platinum Trocar and adjustable Sheath, \$7 50

No. 71.



FLEXIBLE, PLATINUM POINTED, INTRA-UTERINE ELECTRODE, Price, \$5 33

No. 72.



No. 73.



No. 74.



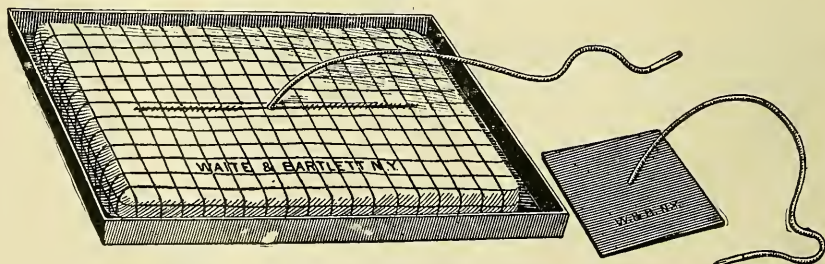
PLATINUM POINTED NEEDLES, HARD RUBBER INSULATION.

For Electrolysis of Fibroid Tumors, Straight and Curved Spear Points and Trocar Pointed.

Price, each,.....\$5 33

Steel Pointed, each.....\$2 00

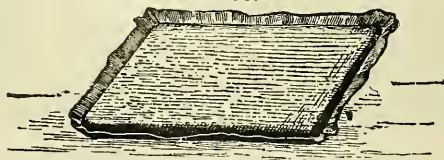
No. 75.



APOSTOLI'S ABDOMINAL CLAY ELECTRODES,

COMPLETE WITH ZINC TRAY, AS SHOWN.....\$3 00

No. 76.



GOELET'S CLAY ELECTRODE.

Soft Rubber Back and Absorbent Cotton on Face of Clay. Complete, \$3 00

No. 77.



No. 78.



CUP SHAPE ELECTRODE, for Os Uteri.....\$2 00

No. 79.



BEARD & ROCKWELL'S INTRA-UTERINE ELECTRODE.....\$2 00

No. 80.



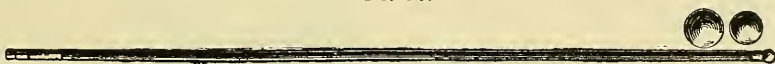
VAGINAL ELECTRODE.....\$1 50

No. 81.



IMPROVED INTRA-UTERINE ELECTRODE. For localizing the current in the Uterus.....\$2 66

No. 82.



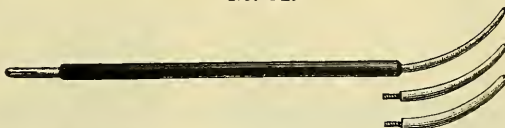
UTERINE ELECTRODE, for treating the ovaries.....\$2 00
As used by Drs. Thomas and Mundé.

No. 83.



METAL TIPPED HARD RUBBER ELECTRODE, for Vagina.....\$2 00

No. 84.



GOELET'S INTRA-UTERINE, 3 Stems.....\$3 00

No. 85.



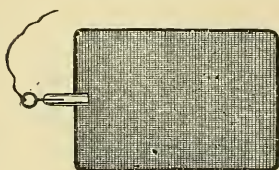
GOELET'S CLAY VAGINAL ELECTRODE.....\$2 00

No. 86.

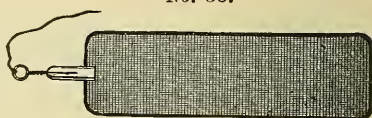


DR. GUNNING'S FLEXIBLE DOUBLE CURRENT INTRA-UTERINE ELECTRODE.....\$4 00

No. 87.



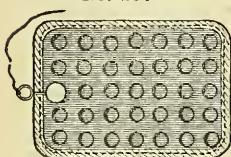
No. 88.



FLEXIBLE GAUZE ELECTRODES.

PRICE OF 2X 3.	.....	\$0 53
" 1½X 8.	.....	0 64
" 3X 4.	.....	0 53
" 3X 5.	.....	0 66
" 4X 5.	.....	0 66
" 5X 7.	.....	0 93
" 6X 6.	.....	1 06
" 6X 8.	.....	1 20
" 6X 12.	.....	1 33
" 8X 12.	.....	1 60

No. 89.

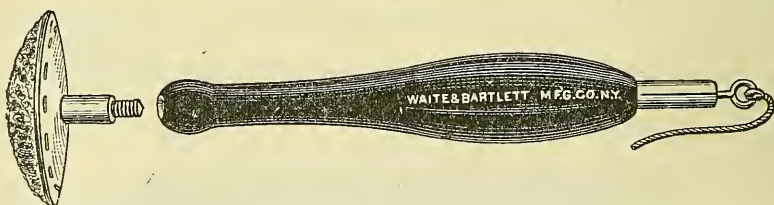


GEORGE J. ENGLEMAN'S

PUNK ELECTRODE.

Price, 6x8.....\$4.00

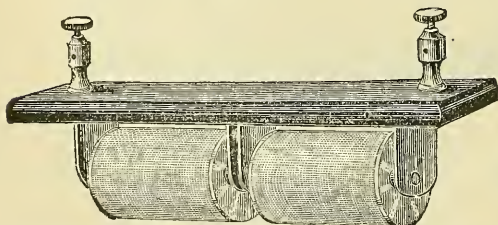
No. 90.



SPONGE COVERED DISC.

Price, per pair \$0 66.

No. 91.



PIFFARD'S ROLLING RHEOPHORE.

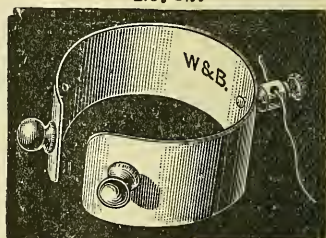
As used by Dermatologists in Skin Excitation.

Price.....\$2 50.

UNIVERSAL HANDLE.

Price, per pair, \$0 66.

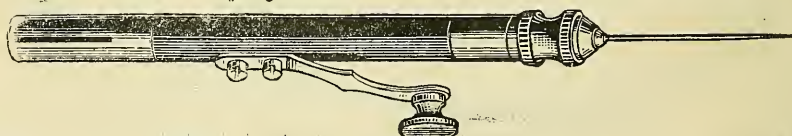
No. 92.



WRISTLET ELECTRODE.

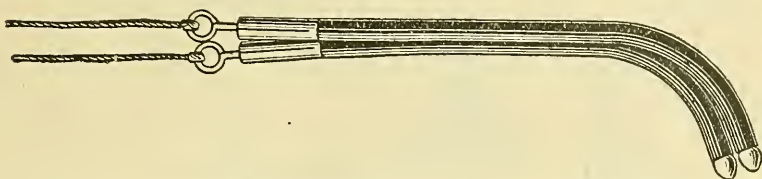
For Rubbing, Massage and Digital Diagnosis.

Price.....\$1 50.



NEEDLE HOLDER, with or without Contact,.....\$2 00

93.



King's Double Current Eye Electrode, for Blepharitis and Trachoma \$2 66

94.



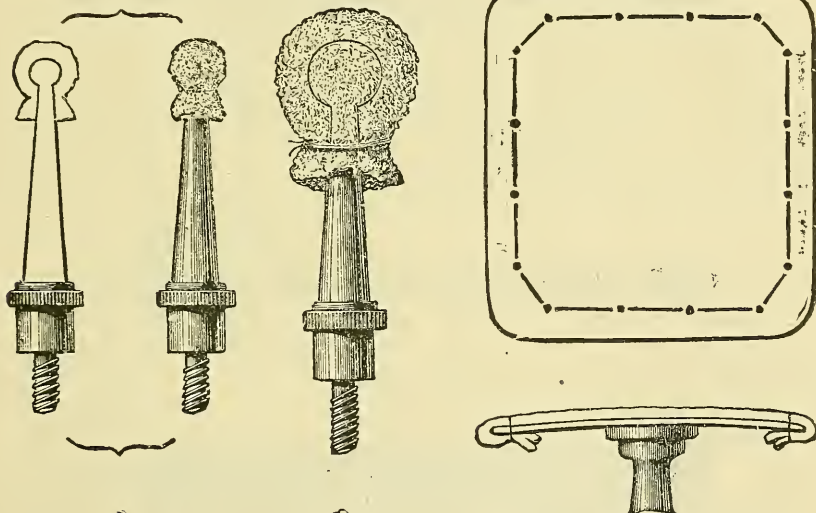
King's Nasal Electrode, for Hypertrophic and Atrophic Catarrh... \$1 50

95.

96.

97.

98.



VARIOUS ELECTRODES. (AFTER ERB.)

Price, Small.....\$0 75 | Price, Large Size.....\$1 50

The Above are full Size.

See New York Medical Journal, July 27th, 1885.

99.

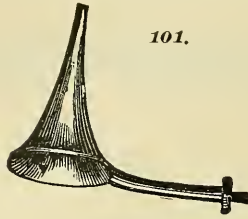


Rectal Electrode.....\$1 50

100.

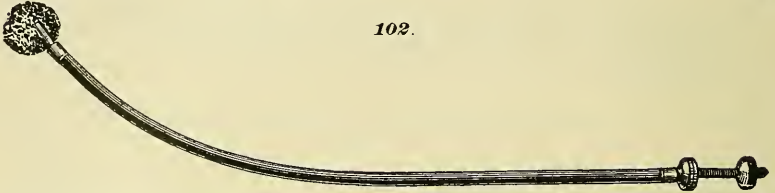


Needle Holder.....\$2 00



101.

Ear Electrode.....\$2 66



102.

Universal Electrode, for Throat.. \$2 32



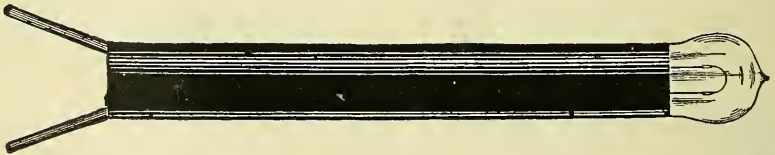
103.

Nasal Electrode.....\$1 50



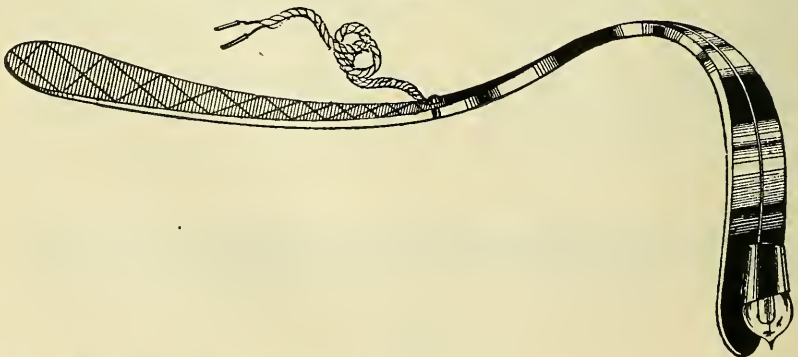
104.

Tongue Plate.....\$1 50



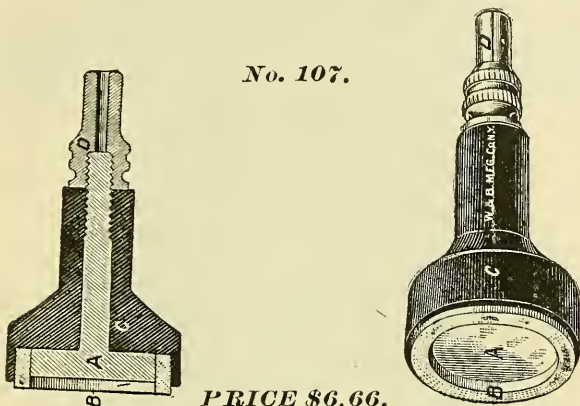
105.

Small Lamp as shown, or with flexible handle.....\$3 00



106.

Tongue Depressor with electric light.....\$5 00

PETERSON'S IMPROVED CATAPHORIC ELECTRODE.

No. 107.

PRICE \$6.66.

This cut illustrates the new electrode. A is a disc, made of metal, that will not oxidize. The stem which passes through the hard rubber cover C is held in place by nut D. It also holds the tip for connecting with the battery. B is a soft rubber ring, which is held in place by A, and at the same time it insulates the skin from A, allowing the current to pass from A to the skin of the patient through the medicated paper contained in the cavity formed by A and B. This electrode is far superior to the old one.

The following is condensed from the article by Dr. Frederick Peterson, of the College of Physicians and Surgeons, entitled, "Electric Cataphoresis as a Therapeutic Measure," in the New York Medical Journal, of April 27th, 1889.

There is a streaming movement of fluids or semi-solid substances, which are in the path of a galvanic current, and such movement is from the Anode to the Kathode, or in the same direction as the current. It seems in a manner to carry substances with it, just as a stream washes floating substances along its course.

Hence drugs may be introduced into the system through the skin by placing them in solution in the path of the galvanic current, which means of course, between the anode and the skin. Solutions of quinine, morphine, strychnine, chloride of potassium, tincture of aconite, aconitia, cocaine, chloroform, etc., may be placed upon or within a properly constructed cataphoric electrode, (making it the anode or positive pole) and transmitted through the skin in a few minutes.

Dr. Peterson reports in detail some thirty-one out of one hundred experiments he made with this method.

He employed it chiefly to produce local anæsthesia for small operations, and for the relief of neuralgia of superficial nerves, and reported some astonishing results.

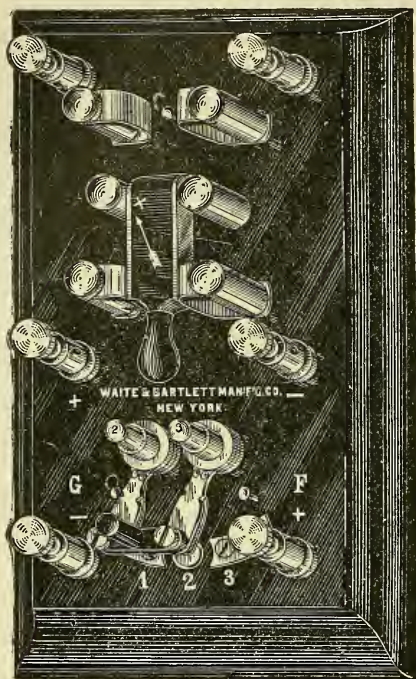
If cocaine be used, it should be a ten or even twenty per cent. solution. It is placed on the simple cataphoric electrode devised by Dr. Peterson and applied to the painful nerve, to the spot to be operated upon. Having made it the positive pole the current is turned on. From 10 to 15 cells may be used, current strength of five or even fifteen Milli-Amperes, and for from five to ten minutes.

In fact it is not necessary to measure the current. A perceptible current is used for a short time, and an imperceptible for a longer period. Cataphoresis is indicated for cutaneous operations, neuralgia, etc., (and then cocaine should be used), and in the local applications of iodine or its compounds to tumors or swellings.

Dr. Peterson also devised a more perfect cataphoric electrode, described in his paper in that it permits of exact dosage. In other respects it is not as efficient as the simple one figured in our illustration. This mode of employing electricity is gaining wide repute and application every day.

In the New York Medical Journal, November 15th, 1890, Dr. Peterson has a note on a new and perfectly simple method of exact dosage of drugs used with the anode. For this purpose he had made by us a particular form of cataphoric electrode, which we call the *Exact Dosage Electrode*. Boeddiker, the pharmacist at 954 Sixth Ave., manufactures medicated cataphoric discs to be used with this electrode. These discs are charged with certain quantities of various alkaloids and other drugs

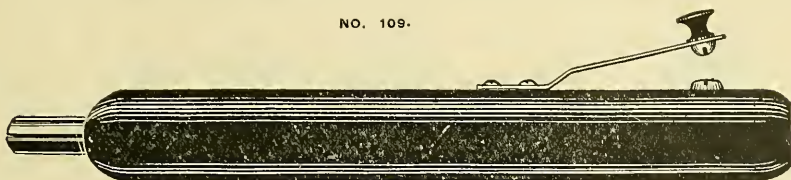
No. 108.



Price, \$8.00

The above cut illustrates a switch as devised by A. de Watteville, M.D. of London, of which a sketch and description is given on page 96 of his work on Medical Electricity, published in 1884. The pole changer we have changed, using one of our own adoption, but the original principal remains the same. On the side marked G, there are two binding posts, one marked plus, the other marked minus. This is for the purpose of fastening the cords or wires from the galvanic battery, positive wire and binding post marked plus, negative wire and binding post marked minus. On the side with the letter F, are 2 more binding posts, that are for the purpose of connecting the cords from the secondary coil of the Faradic battery. You can now have both instruments in operation at the same time. The conducting cords that connect at the other end, have switches. The pole changer has plus mark, as indicated by an arrow. These posts are for the conducting cords. Whichever post the arrow points to, that post is the positive pole. The other switch has 3 contacts, 1, 2, 3. When the switch is thrown over so that it makes the contact, 1 and 2, you have the galvanic current. When thrown in the opposite direction so that you have the levers resting on 2 and 3, you have the Faradic current. On 1 and 3 combined, galvanic and faradic current. This switch enables you to change from one current to the other, without changing cords or electrodes, which is a great convenience.

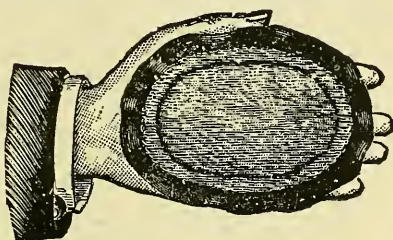
NO. 109.



INTERRUPTING HANDLE.

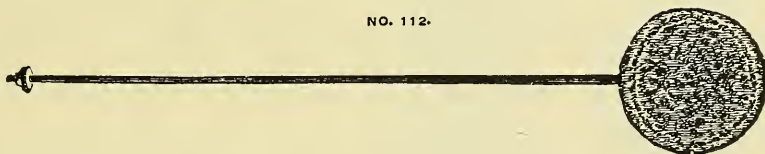
Wood.....\$1.50 | Hard Rubber\$2.00

NO. 110.



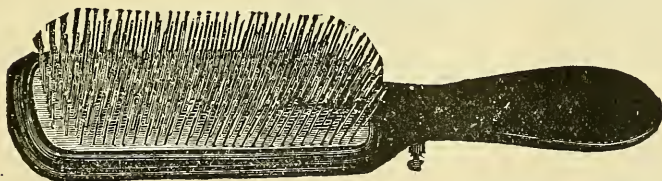
FLEXIBLE ELECTRODE.....\$1.50

NO. 112.



LONG STEM SPINAL ELECTRODE.....\$2.00

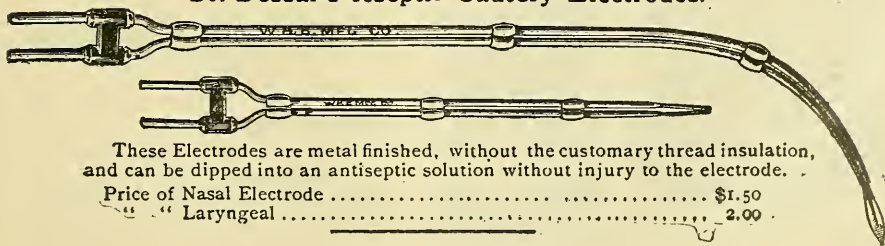
NO. 113.



BRUSH ELECTRODE\$2.00

NO. 114.

Dr. Dessar's Aseptic Cautery Electrodes.

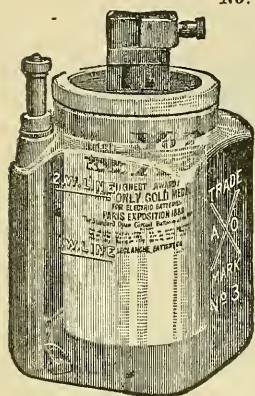


These Electrodes are metal finished, without the customary thread insulation, and can be dipped into an antiseptic solution without injury to the electrode.

Price of Nasal Electrode\$1.50
 " " Laryngeal 2.00

NOTICE.—In ordering always designate the batteries or parts desired by the names below.

No. 115.

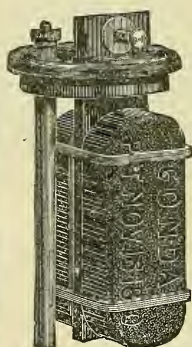


AXO BATTERY.

Cell complete	\$1 00
Porous Cup alone	75
Glass Jar.....	15
Zinc	8
Sal Am. in bag.....	6
Cell Complete, hermetically sealed	\$1 10

"Axo" Battery Complete. "Axo" Porous Cup.
With Jar adapted for Sealing.

No. 116.

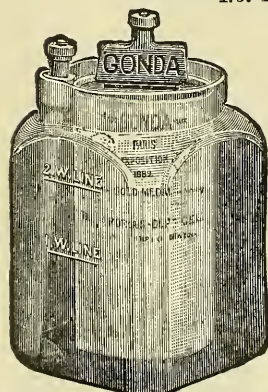


"GONDA" BATTERY.

Cell Complete... ..	\$1 00
Gondas, per pair, with rubber bands.....	60
Carbon Mounted Complete,	15
Glass Jar.....	15
Glass Jar Cover... ..	8
Zinc.....	8
Sal Am. in bag.....	6
Rubber Bands per pair.....	4

"Gonda" Battery Complete. Gondas, Carbon, Zinc and Jar Cover.

No. 117.



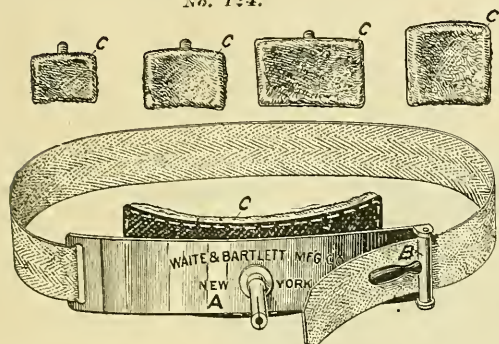
"GONDA POROUS CUP" BATTERY.

Cell Complete.....	\$0 75
Porous Cup alone.....	60
Glass Jar.....	15
Zinc.. ..	8
Sal Am. in bag.	6

DISCOUNT 15 PER CENT.

Genuine "Gonda Porous cup" Battery Complete Genuine Gonda Porous Cup and Zinc.

No. 124.



PUTNAM'S HEAD ELECTRODE.

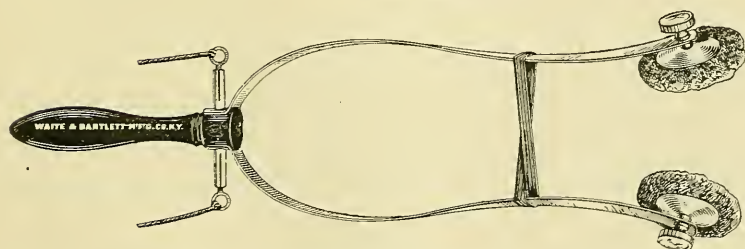
Is an electrode particularly adapted to the use of the neurologist. It is held in place firmly by a belt and spring, that can be used on the head or any part of the body. A great advantage and comfort to the physician and patient.

No. 119.



Shows it in position on the head. Price \$13.33.

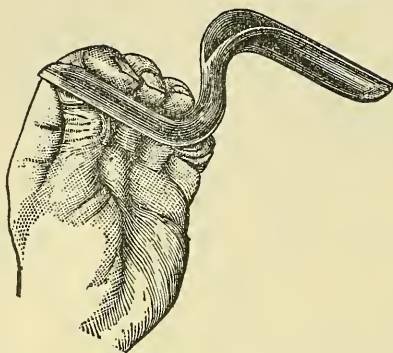
No. 120.



Is an electrode to be used with the static machine, in treating throat troubles of singers with Mortons induced current. This was devised by Dr. Robinson of Albany, who has had excellent results. Price \$12.00

GOELET'S SPECULUM.

No. 121.



The speculum.

Price \$3.33



The elevator for the anterior vaginal wall.

Price \$2.00

The above cut shows a very ingenious modification of the Sim's Speculum by Dr. Goelet which is especially adapted to the wants of the general practitioner because it possesses in the one instrument all the advantages of the Sim's as well as the bivalve or trivalve instruments and many more. It may be used with equal facility with the patient either in the dorsal or lateral positions, and is self-retaining in both positions.

"It consists of two Sim's blades, of different sizes, joined together in opposite directions by a short thick shank where the greatest weight of the whole instrument is concentrated, and the blades are made thin and light so as not to gravitate when in position. This arrangement places the greatest weight close to the perineum, and in consequence there is no weight or strain on the blade which is inserted when the support of the hand is removed, and it is self-retaining.

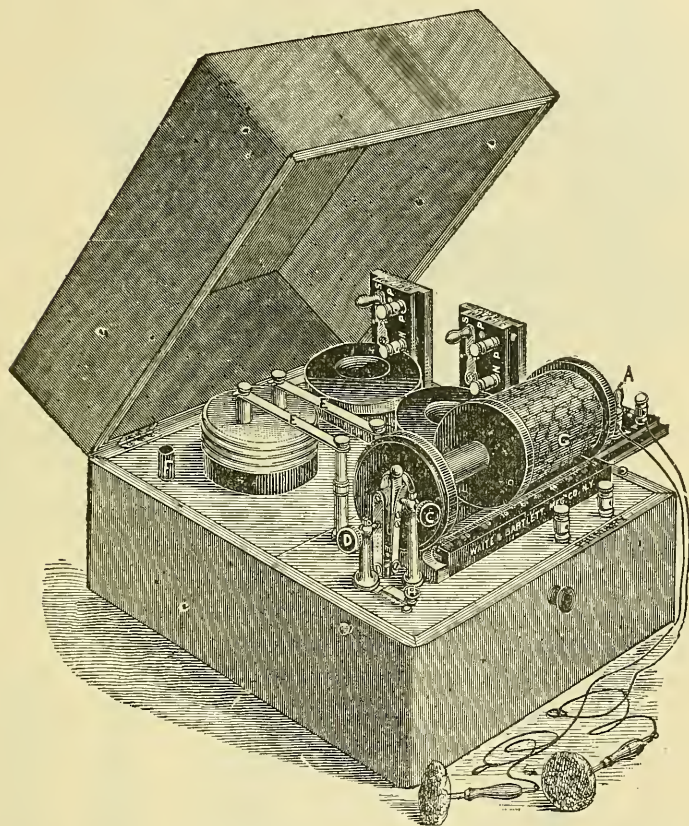
The cut shows the position of the hand in holding the speculum when it is desired to retract the perineum, which is necessary to obtain a perfect view of the cervix. The thumb is the fulcrum and the power is exerted in a downward and backward direction by two or three fingers near the shank. The resistance to be overcome (the perineum) is at the point where the letter **R** is placed.

The elevator is made of flat hard rubber **S** shaped, and is shown in its profile view in the cut. It is so curved as to fit up over the pubis, has rounded edges, and, being elastic, causes no inconvenience to the patient. Traction is made in an upward and outward direction either by the physician, a nurse or the patient herself. It is to be used only for the dorsal posture to hold up the anterior vaginal wall when it prolapses and obstructs the view.

It is by no means a necessary accompaniment of the speculum, though sometimes it proves a great convenience. The convenience of transportation afforded by the size of the speculum is by no means small advantage."

THE ENGELMANN FARADAIC BATTERY.

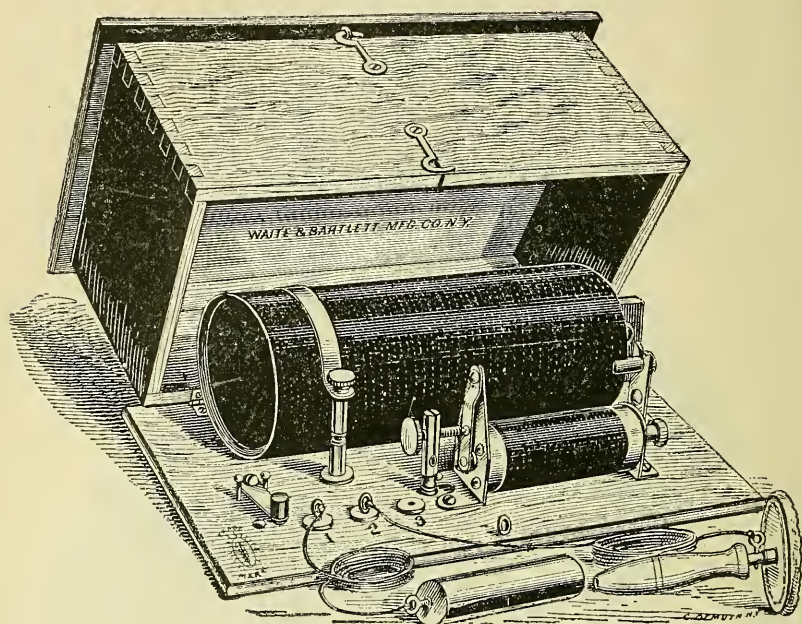
PRICE, \$40.00.

No. 122.

The above Battery is constructed after the data given in "The use of Electricity in Gynecological Practice," by G. J. Engelmann, M. D., of St. Louis. It is provided with 3 coils of different sized wires, and of different lengths. The effects of these three coils are markedly different.

These three coils are marked respectively: Coarse, fine and medium, as, C, F and M. The diameter and length of wire on each coil is also marked in millimeters and meters. Either of the three coils may be used according to the effect it is desired to produce. Use coarse coil for muscular contractions—as for contracting down a subinvolted uterus with medium speed of interruptions. Use fine coil to relieve pain, as in cellulitis; use medium coil when muscular contractions are to be produced, but the parts are too sensitive to allow use of coarse coil.

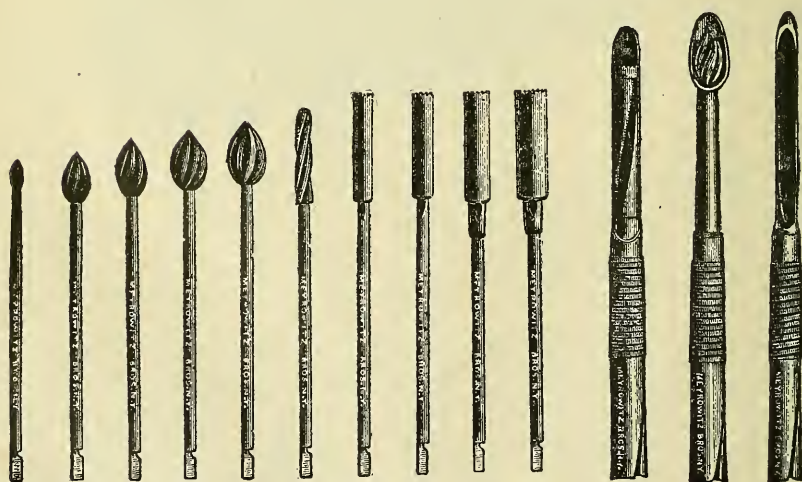
ELECTRO-MAGNETIC MACHINE,



No. 123.

FOR FAMILY USE.

Price, \$10.00.



Nos. 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136.

CONICAL BURRS,
OR DRILLS.

Each.....\$2.00.

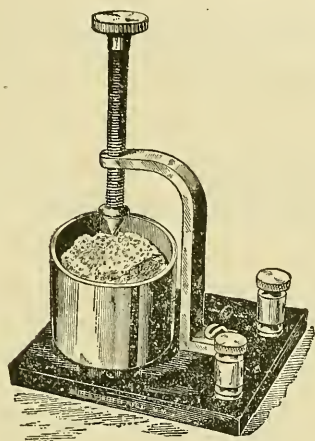
CURTIS TREPHINES.

Each.....\$2.00.

PROTECTING SHEATHS,
FOR FOREGOING.

Each.....\$4.00.

WATER RHEOSTAT

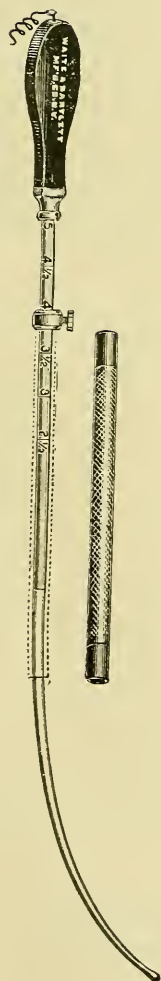


No. 137.

By DR. J. H. KELLOGG,
Battle Creek, Mich.

Price, \$6.66.

No. 138.



GOELET'S Platinum Electrode and Sheath with attachment for measuring depth the Electrode passes into the Uterus.

PRICE. . . \$15.00 to \$25.00.

No. 139.



GOELET'S self retaining Bipolar Vaginal Electrode. The great advantage of this Electrode is that it does not require the aid of the hands to be kept in position. A boon to Gynaecologists.

PRICE. . . \$4.00

No. 140.



Long stem Cataphoric Electrode as used by Dr. Hunter McGuire in forcing medications into the Uterus and other organs in cavities of the body.

PRICE. . . \$6.00.

Dr. G. Gautier's Intra-Uterine Copper Electrodes,
After his French Model. Price, per set, \$6.66.

Dr. M. H. King's Cataphoric Intra-Uterine Electrodes,
Price, per set (platina lined), \$13.33.

Dr. Robert Newman's Rectal Electrodes,
Price, per set, \$10.00.

Dr. J. Mount Bleyer's Nasal Electrodes,
Price, per set, \$5.00.



Prices furnished on application for the following named accessories
 (in whole or in part, as desired) arranged on a base to be placed on
 table or in cabinet, with connection for cells :

Galvanic Current Selector.

- " Rheotome.
- " Polarity Changer.
- " Rheostat.
- " Milliampere Meter.

Faradic Coils.

- " " Engleman (fine, medium and coarse.)
- " Rheotome (fine and slow vibrations).
- " Rheostat.

Engleman's Interrupter and Register of Vibrations.

- " Alternator for giving Sinusoidel Current.

Houghton's Attachment for Massage of the Ear Drums.

De Watteville Switch, for using Galvanic and Faradic Current com-
 bined.

In asking for price give size of base and distance of cells from
 location of base.

A MODIFIED ELECTRICAL HEAD ILLUMINATOR.

By Wendell C. Phillips, M. D., New York.

The instrument shown by the accompanying cut was exhibited before the New York Academy of Medicine, Section in Laryngology, at the meeting held May 24th, 1893, and published in the Medical Record July 8th, 1893.

Of all the instruments devised for using electricity to illuminate the various cavities of the body, notably the nose, throat and ear, this one seems to me to come nearest to fulfilling all the requirements.

It is light in weight, easy of manipulation and has a lens that is well-high perfect. It carries a six volt, four candle power lamp, but can be made to accommodate lamps of higher or lower voltage.

It is held upon the head by means of a strong but narrow steel band, similar to those sometimes used in ordinary head mirrors and lined throughout with fibre.

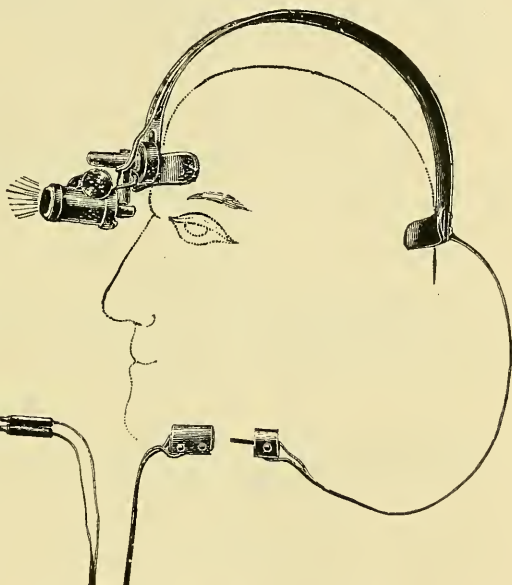
By means of the thumb-screw shown at the side of the lamp cylinder, the focus may be easily and quickly regulated without removing the lamp from the head.

The storage battery required for this instrument should be of four cells. These batteries can be furnished in two sizes, the large size giving eight volts and seventy-five amperes. The smaller one, giving eight volts and fifty amperes, can be easily carried. Either battery can at the same time be used for cautery or motor work.

Head Illuminator, complete, including cord,	-	-	-	\$18.00
Extra Lamp for Head Illuminator,	-	-	-	2.00
Battery, complete, large size, }	-	-	-	50.00
" small size, }	-	-	-	40.00
with Rheostat,	-	-	-	
Head Illuminator and battery, large size complete,	-	-	-	65.00
" " small " "	-	-	-	55.00

For transillumination of the antrum a simple lamp has been found to be even more convenient and serviceable than the other complicated ones now on the market. It is a six-volt, four-candle-power lamp, with different globe mounted upon a short hard-rubber holder from which are extension wires covered with rubber tubing, giving flexibility.

The under surface of the lamp is frosted.



ELECTRICAL NOTES AND DEFINITIONS.

Resistance, R.—The **Ohm** is equal to 10^9 C.G.S.* units of resistance. The **Legal Ohm** (Paris Congress, April, 1884) is the resistance of a column of pure mercury, 1 square millimeter in section, and 106 centimeters long at the temperature of melting ice.

One volt is that Electro-Motor Force which will send a current of one ampere through a resistance of one ohm.

One ampere decomposes .00009324 gramme of water (H^2O) per second, or deposits 1.118 milligrams. of silver per sec. = 4.025 grms. per hour.

Thus we see that in every circuit there are three things—E.M.F. current and resistance; if we know the values of any two of these, it is possible to find the value of the third. We can do this according to Ohm's law.

Ohm's Law.

Let E stand for E.M.F. (volts.)
 " C " current (amperes.)
 " R " resistance (ohms.)

Then

$$C = \frac{E}{R}, \text{ or } R = \frac{E}{C}, \text{ or } E = C \times R$$

Thus suppose in a circuit there is a battery having an E.M.F. of 50 volts, and that the circuit has a total resistance of 25 ohms we can find the strength of the current by dividing the volts by the ohms. thus—

$$\frac{50 \text{ volts}}{25 \text{ ohms}} = 2 \text{ amperes.}$$

In the second case, we know the E.M.F. of the current in the circuit; let them be respectively 30 volts and 45 amperes; then

$$\begin{aligned} \text{the resistance of the circuit} &= \frac{30 \text{ volts}}{45 \text{ amperes}} \\ &= \frac{2}{3} \text{ of an ohm.} \end{aligned}$$

In the third case—when we know the current and resistance have to find the E.M.F.—let the current strength be 7 amperes, and the total circuit resistance 3 ohms; then

$$7 \text{ amperes} \times 3 \text{ ohms} = 21 \text{ Volts E. M. F.}$$

Very small currents, as used in electrical treatment of disease, are measured in milliamperes.

$$1 \text{ milliampere} = \frac{1}{1000} \text{ th ampere.}$$

$$\therefore 1 \text{ ampere} = 1000 \text{ milliamperes.}$$

COMPARISON OF VARIOUS E.M.F's.

	VOLTS.
AXO Leclanche Cell,	1.60
Law, "	1.33
Diamond "	1.27
Samson "	1.35
Bichromate "	1.90

*The following are the Names of a few of the
Physicians using our Cabinets.*

-
- | | |
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| C. E. Fisher, M. D., Austin, Texas. | Dr. Hunter McGuire, 315 E. Grace St., Richmond, Va., |
| D. V. Dean, M. D., Grand Ave. & Olive St., St. Louis. Mo. | Dr. Saunders, 126 E. 82d St., N. Y. C. |
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| C. E. Riggs, M. D., St. Paul, Minn. | Dr. A. H. Brown, 7 William St., Auburn, N. Y. |
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| D. Webster Prentiss, M. D., 1101 14th St., Washington, D. C. | Dr. E. Lane, Scofield, Chambersburg, Pa. |
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| A. C. Kemper, M. D., Cincinnati, Ohio. | Dr. W. W. Haberton, 36 S. Ludlow St., Dayton, Ohio. |
| G. B. Orr, M. D., Cincinnati, Ohio. | Dr. N. H. Williams, Jackson, Mich. |
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| Frank H. Gardener, 1016 14th St., N. W. Washington, D. C. | Dr. T. Englebach, New Orleans, La. |
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- LeGrand S. Denslow, M. D., St. Paul Minn.
- Charity Hospital, New Orleans, La.
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- A. W. Herzog, M. D., Hoboken, N. J.

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“ H. W. Vinberg, “

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“ A. R. McMichael, “

“ Samuel Schaie, “

“ A. Kunitzer, “

“ John A. Benermann, “

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“ T. C. Walsh, Syracuse, N. Y.

“ Curran Pope, Louisville, Ky.

“ J. M. Krim, “

“ J. H. O'Reilly, “

“ F. W. Koehler, “

“ E. B. Scribner, “

“ W. F. Pechuman, Chicago, Ill.

“ J. C. Brubaker, “

“ S. Lewin, “

“ R. M. Genius, “

“ Mary Mitchell, Aurora, Ill.

“ J. W. Keating, Detroit, Mich.

Dr. W. T. Moore, Luddington, Mich.

" J. P. Massey, Richmond, Va.

" L. C. Boshier, "

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Dr. C. R. Dickson, "

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" T. F. Stark, "

" W. D. Lawrence, "

" J. E. Bowers, Duluth, Minn.

" O. C. Strickler, New Ulm, Minn.

" Flora L. Aldrich, Anoka, Minn.

The Sanatorium, Hudson, Wis.

Dr. J. G. Babcock, Cumberland, Wis.

" Chas. A. Gaudet (5), New Orleans, La.

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" M. A. Nelms, WallaWalla, Wash.

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TESTIMONIALS.

WAITE & BARTLETT MFG. CO.

HENRY E. WAITE, M. D.

19 East 28th Street,

New York, June 17th, 1890.

MY DEAR SIR:—I take great pleasure in expressing to you my opinion that I have found you the best man in N. Y. to go to, to get practical work done in medical electrical appliances. Relating to the Franklinization particularly, your work has been marked by originality in constructive details, and your knowledge of electricity and its practical applications shows itself in most numerous and commendable directions.

Wishing you continued success in the field you have so largely made your own by perseverance and merit, I am,

Very truly yours,

Prof. WILLIAM JAMES MORTON, M. D.

Post-Graduate Medical School.

WAITE & BARTLETT:

156 Madison Avenue,

New York, March 29th, 1886.

DEAR SIR:—I cheerfully testify to the convenience, durability and general excellence of your electrical apparatus designed for medical purposes.

Your reputation as expert practical electricians in telephonic and telegraphic work has been fully sustained in this new department of electrical manufacture. The Mechanical work which you have performed under my guidance has been eminently satisfactory to me.

Respectfully yours,

A. L. RANNEY, M. D.

Prof. of Anatomy and Physiology of Nervous System in N. Y. Post-Graduate Medical School and Hospital;

Prof. of Nervous and Mental Diseases in the Med. Department of the University of Vermont.

20 West 45th Street,

WAITE & BARTLETT:

April 2d, 1892.

GENTLEMEN:—In regard to the electrical apparatus which you have furnished me, I take pleasure in saying that both the 36 cell portable galvanic battery, and the large combination cabinet battery, (faradic and galvanic) have given me perfect satisfaction; both have been in almost daily use for nearly a year, and never have failed me, as so many batteries are liable to do. I can thoroughly recommend them. The sponges, and intra-vaginal, uterine and rectal electrodes which you have made for me have also been extremely useful.

Yours very truly,

PAUL F. MUNDE.

MESSRS. WAITE & BARTLETT:

New York, April 25th, 1886.

DEAR SIR:—I take pleasure in stating that after examination of various batteries I chose your "Perfected Cabinet" for use in this hospital, and am entirely satisfied with the same.

Very respectfully,

WALTER WYMAN, M. D.

Surgeon General U. S. Marine Hospital Service.

MESSRS. WAITE & BARTLETT:

58 West 45th Street,

New York, Sept., 8th, 1886.

DEAR SIR:—For the last two years I have been using your batteries and static machines in both hospital and private practice, and consider them the best that can be obtained. I can particularly recommend your static machines which, for continual action in all weather, and the facility with which they can be charged, are superior to all others.

Yours very truly,

GRÆME M. HAMMOND, M. D.

MESSRS. WAITE & BARTLETT have furnished electrical instruments for the use of the Neurological Department of the Post-Graduate School, and have given proofs of much ingenuity and mechanical skill,

Yours very truly,

C. L. DANA, M. D.

MESSRS. WAITE & BARTLETT

DR. LANDON CARTER GRAY,
158 Montague Street, Brooklyn, N. Y.

GENTLEMEN.—It gives me great pleasure to say that the electrical devices of your make which have been in use at the New York Polyclinic, have given me entire satisfaction.

Yours very truly,

LANDON CARTER GRAY,

Buffalo, N. Y., May 6th, 1889.

I take pleasure in stating that I have examined the various instruments and appliances made by MESSRS. WAITE & BARTLETT, and am convinced that in perfection and accuracy of workmanship, and in elegance of design they have no superiors in the market. I can cordially commend them to all who are contemplating purchase of such goods.

ROSWELL PARK, M. D.

MESSRS. WAITE & BARTLETT MFG. Co.

Buffalo, N. Y., June 15th, 1889.

In giving you this letter I do so with considerable personal satisfaction. You will remember how bitterly skeptical I was when I first met you in respect to the subject of Electro-Therapeutics. Your science and assistance in connection with the patients whom I submitted to your care while in Buffalo, has proved exceedingly valuable to me, and of untold benefit to those chronic sufferers.

In commending your Cabinet Battery I may say that it is very simple in its manipulation, and quite handsome in its construction. The other electrical apparatus I purchased from the WAITE & BARTLETT MANUFACTURING COMPANY evidences the same skill and perfection, both from a mechanical as well as practically scientific standpoint; consequently I commend your electrical appliances very highly. Hoping to see you in Buffalo again before long, I am, yours very sincerely,

H. E. HAYD.

MESSRS. WAITE & BARTLETT

Buffalo, N. Y., April 15th, 1889.

DEAR SIR:—I desire to order one of your Static Electricity Machines with six revolving twenty-six inch plates. It is but justice to say that after examining the machine of Carre and of Trouve in Paris, and of Hirschmann in Berlin, I have decided upon yours as being best adapted for the purposes for which it is designed.

J. W. PUTMAN.

MESSRS. WAITE & BARTLETT:

72 Lafayette Avenue, Detroit, Nov. 27, 1888.

GENTLEMEN:—* * * I am very well pleased with the cabinet battery, and have lost no opportunity of exhibiting it to my professional brethren as well as my students of the University of Michigan.

Yours very truly,

DONALD MACLEAN, M. D.

G. Benton Massey, 1706 Walnut St.,

MESSRS. WAITE & BARTLETT:

Philadelphia, Feb. 14, 1889.

GENTLEMEN:—I regret exceedingly that an examination of your batteries and other apparatus which I have just made at your request, was not made before the completion of my recent work on "Electricity in the Diseases of Women," as I should then not have failed to commend certain excellencies found in them. Your meter responds perfectly to an actual test and comparison with others, and the other apparatus appears to be all right. There are some special points about the portable galvanic batteries that appear to me to add greatly to their efficiency and reliability.

I am, very truly yours,

G. BENTON MASSEY, M. D.

MESSRS. WAITE & BARTLETT,

Youngstown, O., Jan., 30th, 1893.

DEAR SIR:—I am using your Static machine in my practice every day. It works beautifully. My power is a $\frac{1}{8}$ horse-power, alternating fifty volt current, Excelsior Motor.

I very seldom find the machine "dead" but when I do, one minute's work with your charge always puts it in good working order. I could not dispense with the charger under any circumstances.

Respectfully yours,

H. H. HAHN, A. B. M. D.

Richmond, Va., January 19th, 1893.

All of the electrical apparatus that I have obtained from the WAITE & BARTLETT MANUFACTURING Co., has given me entire satisfaction. I have used both their faradic and galvanic machines and found them durable and efficient.

HUNTER MCGUIRE, M. D.

WAITE & BARTLETT M'F'G Co.,

Gloversville, N. Y., July 30, 1895.

GENTLEMEN—It is now three years and two months since I purchased your Hammond Wall Cabinet, with forty-four Azo cells. It has never failed to serve me in all that time. Of course some cell might and occasionally did fail, but I could always find enough that would work. I have never disturbed the fluid in the cells and have required only eight new zincs and a few new connecting wires between the cells. The entire expense since setting up the battery over three years ago has not exceeded one and one-half (\$1.50) dollars.

Yours truly, DR. W. S. GARNSEY.

MESSRS. WAITE & BARTLETT,

Louisville, Ky., July 6, 1895.

GENTLEMEN—I have had the various batteries made by you in use for a number of years and they have always given me perfect satisfaction, rarely getting out of order and requiring as little attention as one could ask. During five years constant daily use your Static Machine has given me a uniform current, of sufficient strength, (even in our hot days of August, when the air is humid.) Its results are too well known to expatiate upon. Your Cabinet Battery, your Engleman Faradic, and the various electrodes made by you, have all been in more or less constant use for some years, and in the most delicate of electro-therapeutic work, when constancy of current, accuracy of discharge are needed, yours has not failed me. I can recommend them highly to the profession.

Very truly yours, DR. CURRAN POPE.

Professor of Diseases of the Mind and Nervous System, Louisville Medical College; Consulting Neurologist, Louisville City Hospital, and formerly Resident Physician to the Anchorage Insane Asylum.

WAITE & BARTLETT M'F'G Co.,

Albany, N. Y., July 30, 1895.

GENTLEMEN—My Static Machine gives me perfect satisfaction, and I am very much pleased with it.

Dr. WM. E. MILBANK.

STODDART BROS.,

Buffalo, N. Y., August 22, 1895.

GENTLEMEN—Replying to your inquiry I can report that the Static Machine bought of Waite & Bartlett six years ago has been in continuous use ever since. I have been very much pleased with its uniformly good work. It is easily kept in order, and—what is especially important—it is easily recharged. Therapeutically I have found it of great value in all forms of neurosthenia and functional nervous diseases. As a stimulant to the circulation it is easily superior to all other forms of electricity.

JAMES W. PUTNAM, M. D.

113 West 34th St.
July 20th 1892

Dr. A. E. Waite

Dear Sir

The Static machine which you placed in my office last January is the best that I have had. But yours is I am free to say the most satisfactory & we need the best. — Very truly,

A. D. Rockwell M.D.

A. L. Barney, M. D.

156 MADISON AVENUE,

New York City.

CONSULTATION HOURS UNTIL ONE O'CLOCK.

Feb 9th 1893

Waite and Bartlett Mfg. Co

Dear Sirs.

My improved model of the Hallz-induction machine, with the charging attachment that I have added since I first introduced the original model to the profession in 1883, has never failed to give me perfect satisfaction.

My own instrument has stood in my office for the past 18 months without any artificial dryer within the case.

I think I can justly claim to have perfected the static machine for medical purposes; as I know of no other model that in any way compares with my own for durability, reliability and generating power.

The arrangement of galvanic and faradic attachments devised by me for an office cabinet (so satisfactorily made by your firm) has also apparently supplied a long-felt want in the minds of many leading electricians that are now using that form of cabinet.

Dr H. E. Waite of your firm rendered me very important aid some years ago in executing various suggestions of mine relative to both the improved office-cabinet and the static machine.

I have never regretted that I selected your firm to manufacture the electrical instruments which I have devised and I feel personally indebted to your firm for their high standard of mechanical workmanship.

Respt. yours.

A. L. Rowsey

The College of the City of New York,

Cor. Lexington Ave. and 23d St.

New York, December 16th 1892.

To the

Waite & Bartlett Mfgs. Co.

Gentlemen,

It gives me pleasure to state that for several years I have brilliantly illustrated lectures on Statical Electricity, with your large and elegant modification of "Koltz Induction Machine" at the "College of the City N.Y.", at the "Bellme Hospital Medical College", and last Summer, at the "Chautauqua Assembly", before an audience of several thousand persons.

The Machine is constructed to operate successfully under all atmospheric conditions.

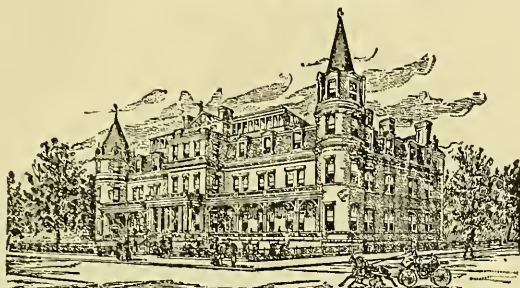
From these years of practical experience, I can heartily commend your splendid Electrical device to Professors of Physics in Scientific Institutions.

It is also admirably adapted, with its various accessories for use by Members of the Medical Fraternity.

Yours cordially
J. Edgar Adams M.D., L.D.S.

THE HOSPITAL WILL BE CLOSED DURING JULY AND AUGUST

Dr. William A. Hammond's Private Hospital
FOR DISEASES OF THE NERVOUS SYSTEM /



14TH STREET AND SHERIDAN AVENUE

Washington, D. C., Oct. 16th 1892

I have no Hesitation in saying
that the Waite & Bartlett
Manufacturing Co. Construct the
best electrical Apparatus for
Medical and Surgical use of
which I have any Knowledge
I have used their galvanic,
faradise, and static machines
for many years, and have
always found them reliable
and efficient

William A. Hammond

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Conducting Cords, five ft.,	-	"	2	-	.60
" " ten ft.,	-	"	2	-	1.00
Handles, per pair,	-	"	2	-	.50
Sponges,	-	"	2	-	.50
Complete Faradic Element,	-	-	-	-	2.00
Faradic Cell,	-	-	-	-	.50
" Zinc,	-	POSTAGE	4cts.	-	.25
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" Zinc Ring,	-	"	2	-	.25
" Binding Post	-	"	2	-	.15
" Hard Rubber Cap,	-	"	2	-	.50
" Soft Rubber Cork,	-	"	2	-	.10
" Soft Rubber Cap.	-	"	2	-	.10
Galvanic Zinc,	-	"	4	-	.20
" Carbon,	-	"	3	-	.20
" Connection,	-	"	2	-	.10
" Cell	-	"	7	-	.25
Battery Fluid, per pt.,	-	"	-	-	.25
" " " qt.,	-	-	-	-	.40
" " " half gal.,	-	-	-	-	.60
Sulphate of Copper, per lb.	-	-	-	-	.12
Bichromate of Potash, per lb.,	-	-	-	-	.25
Salamoniac, per lb.,	-	-	-	-	.20

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The Post-Graduate MEDICAL SCHOOL & HOSPITAL

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20th STREET, cor. 2d AVENUE.

Electro-Therapeutical Department under the direction of

PROF. WILLIAM J. MORTON, M. D

This school has the great advantage of having a very large out-door clinic as well as one of the most complete Hospitals in the country and thus is enabled to present to the student the subject of Electro-Therapeutics in all its practical bearings, medical and surgical. Gynæcological Electro-Therapeutics receives full attention and students are taught the classical procedures.

Clinics are held Mondays, Wednesdays and Fridays. This clinic has already been established for six years, and is, we believe, the first clinic for the treatment of the poor by electricity to be established in connection with any Medical School in this country. During the last year 2,000 patients were treated, and it is believed that the facilities for instruction offered by it are unexcelled.

THE WAITE & BARTLETT M'FG CO.'S EXHIBIT



AT THE
Columbian Exposition, Chicago, Ill., 1893.

